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ABSTRACT

Focusing on new concepts in college reading, the papers in this volume were drawn from the thirteenth annual meeting of the National Reading Conference held in 1963. The 20 papers are grouped into three sections, the first of which contains descriptions and evaluations of reading programs, a study of methods of training teachers for the college-adult reading program, and discussions of the philosophical and psychological perspectives in reading. The second section contains presentations that deal with specific aspects of the reading process. Research findings are presented in the fields of vocabulary development, evaluative phonics, creativity, flexibility, interest, attitudes, cloze techniques, micromovements, and psychological needs of students. The third section consists of a critique of current research, and a comprehensive summary of research in college and adult reading for the preceding year. An appendix contains a copy of the by-laws of the National Reading Conference. (FL)

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NEW CONCEPTS
in
COLLEGE-ADULT READING

THIRTEENTH YEARBOOK OF THE
NATIONAL READING CONFERENCE

Edited by

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PREFACE

The *Thirteenth Yearbook of the National Reading Conference* contains the papers presented at the thirteenth annual meeting of the Conference which met at the Jung Hotel in New Orleans under the sponsorship of Loyola University, on December 5-7.

The papers have been compiled in three broad categories. The first part contains descriptions of reading programs including pre-college instruction. Also included is an evaluation of reading programs and a study of methods of training teachers for the college-adult program. Discussions of the philosophical and psychological perspectives in reading conclude this section.

The second part includes presentations that deal with specific aspects of the reading process. Significant new research findings are presented and, while these studies are not confined to college-adult populations, they present pertinent data of value at this level. The studies range from vocabulary development, evaluative phonics, creativity, flexibility, interest and attitudes to cloze techniques, micro-movements and psychological needs.

The third section consists of a critique of current research, and the annual comprehensive summary of research in college-adult reading.

Appendix A contains a copy of the By-Laws of the National Reading Conference. An announcement concerning the Fourteenth Annual Meeting is included.

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PART I

A Permanent Foundation For College-Adult Reading Improvement

Part I—Developing Through School Education Sound Popular Concepts of Reading and Reading Improvement

Harold M. Nason

Department of Education
Province of Nova Scotia

We cherish, above all, our freedom. We seek complete security. We demand, at the same time, the right to direct the society in which we live. Often complacently and sometimes a bit boastfully those of us who call ourselves educators state that we are developing people who have adequate vocational competence and a satisfactory set of values evolved from their cultural inheritance.

If we would retain the freedom we cherish, maintain the security we seek and uphold the right to direct our way of life in a changing, challenging world, education must not become self-satisfied with the adjustments we are making in science and mathematics toward technological excellence, the earlier and broader offering of vocational training, and the trend to wider consideration of modern literature, modern languages, and modern world problems.

These moves, no doubt wise ones, do not represent sufficient adaptation of the centuries-old theories and practices that provided a sound educational structure through years of slow change and gradual growth.

While culture patterns remained fairly constant, it was easy for the educator to go on moulding children in the image of the parents, using the established media of education to continue the type as though it were as commonplace and free as the air we breathe.

We must look to retaining proven values of the past in the light of rapidly changing patterns. So we must view our day in broad perspective. We must envision what Shelley so aptly termed "the gigantic shadow which futurity casts upon the present."

Vocational competence today may be incompetence tomorrow. A prominent Canadian company claims they must retrain engineers at least three times during their active work years. "It has been estimated that, in most fields of knowledge a scholar who reads continuously through the year, 24 hours per day, would require 18 to 20 months to handle one year's output of newly published materials. . . . One scientist has remarked that whenever he takes a week's vacation, he finds himself six months out of date." (3, p. 1)

Revised school curricula alone will not guarantee a society where the individual can be both free and secure. Science and mathematics textbooks are now out of date when they come off the press. Even a reasonably thorough objective evaluation of one decade's thought and action does not necessarily provide needed criteria for making decisions in the next decade's problems on the basis of sound values.

The free society of the future demands the type of individual who not only is well trained and educated but also has the skill and the desire to continue his education. Many media can and will contribute to his ongoing education, but that skill which will open to him the widest and most individual choice of tutors and make him more the master of his own fate is the skill of reading. So the future of each individual and the future of our free society is founded fundamentally upon sound popular concepts of reading and of reading improvement.

There is obviously vocational value in graduating from school education a person who knows how to read and therefore can be re-educated to meet changing vocational demands and opportunities.

We need people who not only will contribute vocationally but who will have the inspiration and power to refine and improve the community in which they enjoy the products of their labours. The worker and the citizen are produced by the same system of education. If we are to have intelligent, active citizens, education must seek to graduate individuals who can read and who want to read. These are the people who will be most apt to continue to read with discrimination and judgment and be best equipped to evaluate public issues, draw conclusions, and act in the best interests of their fellows and yet in accord with their own basic beliefs.

The necessary skills and the desire to read continuously will help place the individual in a position where he can act as a morally responsible person. Moral judgment is based on a wide understanding of facts, not on the narrow outlook that may come from too intense concentration on mastery of the techniques of one subject or field.

Education produces the man as well as the citizen and the worker. Our philosophy of education must transcend the popular distinctions among the vocational, the cultural and the spiritual. How far we achieve with not too much conflict will depend upon the character and depth of values found in the people of the community. It is the business of education to produce the type of person who can be free because he is responsible, who is ready to carry the burden of such responsibility, indeed to appreciate the responsibilities of being a free citizen and to accept them with some enthusiasm.

The road to freedom is the road of disciplined broad learning. With wisdom we place large emphasis on education through direct experience, but the free individual in the complexity of today must have experiences of yesterday, of today, and of tomorrow, much of which must come vicariously and call for continuous thoughtful selective reading. Not a new concept, this, rather one well put by Plato in his *Republic*. "The young should live," he stated, "in a wholesome climate and drink in good from every quarter, so like a wind bringing health from healthy lands, some influence from noble works may from childhood upward constantly fall on ear and eye and insensibly draw them into sympathy and harmony with the beauty of reason."

It is the business of school education to provide our children with both direct and vicarious experiences that will help them discover for themselves, and be inspired by what is honest, trustworthy, and responsible, and above all to apply these principles in their own living. The future of our welfare state will depend on how well education leads all people to develop and prove their judgment, understanding and imagination, and to accept and appreciate their own sense of personal responsibility. It is also education's business to instill in people realization that being properly educated is a unified and continuing process. The educated person continues to provide himself with the experiences that assure a broad knowledge of facts on which to base sound moral decisions that will contribute to a society in which people can be free and secure at the same time. The educated person continues to experiment and explore and to listen and look and also to read. He reads to maintain and to enrich the knowledge and understanding that equip and inspire him to be with courage and determination a self-disciplined, morally responsible person. Only with a sufficient supply of morally responsible citizens with the self-discipline that comes from self-chosen experiences in reading, thinking and doing continuously can a developing system of social security be a blessing rather than a curse.

Developing a morally responsible individual is all the more difficult at a time when technical and vocational education is being given a new and enlarged significance. Technical and vocational students must be stimulated and taught to appreciate the wider social and cultural significance of what they are learning. To live and work long years with machines and materials of any kind with little opportunity to read, to meet, to cooperate and to make free choices on courses of action may produce the dangerous type of mind of which we now have some evidence.

The direction which education must take is apparent, the challenge is large, for we are bravely requiring ourselves to seek to develop a people with the will and the way to keep themselves informed and to act on sound personal principles in an age when mankind, according to Whitehead, "is in one of its rare moods of shifting its outlook." New ways of life, new ways of thinking, and new means of communication force upon us full consciousness of significant changes in the cultural media of education. An alarming growth in the diversity and pressure of the agencies which constitute the educative society brings new import to the simple yet subtle statement that everything that is said to a child, everything that is done to a child, everything that a child sees someone else do has its educative effect.

With all the mass media now used to direct and coax the way people think and feel, school education must change even more basically than it has if it is to maintain the influence it once had on developing people's standards of speech, thought, and action, and if it is to equip people to strengthen these standards to control and shape society's future and their own.

We are attempting to educate children in a society where young people are becoming increasingly independent of their parents, their teachers, and other advisors; where they take it for granted that the state will provide for all their wants and desires.

When the high school student sits with his girl friend and listens to the incessant advertisement on radio and television, advising him that credit is readily available to supply him with university training, car, wife, furniture, and a pleasant annual holiday; trying to educate children to be thrifty and to accept some moral responsibility to the community brings the educator into conflict with many forces with money and persuasive power to direct them elsewhere.

We must recognize the dangers as well as the values in the new type of industrial order that we are developing with conscious pride. In this order we find an increased number of bodies organized to support and represent a common economic interest. Large and powerful, these bodies are deliberately planned for a definite purpose. They have not arisen spontaneously out of good personal relationships. They are in fact pressure groups. The result is that the more natural groupings of people such as the family tend to lose their influence. There is no trade union or professional organization to maintain the special place of the family in the community today. Concerned with the development of our future free society, we must certainly be conscious of the influence of the great mass of wealthy, powerful, national organizations which are smothering out the traditional groupings that used to have so much beneficial effect because they existed with one intrinsic purpose — developing a good community.

Many things point up, to an almost painful degree, the solid weight of the responsibility we face and the light and delicate balance of our chances of success in achieving a free society.

We certainly cannot hope to build a solid structure of education or society on moral and intellectual confusion. I believe that if we lose the freedom we have inherited we are not likely to lose it because someone comes in from outside and takes it away from us. It is much more likely that we may lose what we term to be of value through a far more ignominious course. We know life can be materially very comfortable and nice. Our community can seem to be well run. No doubt we would all be willing to fly banners in honour of the standard of life to which we are accustomed. Loss of character, loss of imagination and loss of insight into the ability to cooperate can cause freedom to disappear without our knowing or even caring that we have lost it.

We must never lose the essence of the things that make us human. We must keep continuously in our grasp the real sense of the conditions and the tensions under which men must live and maintain it they are to be free. In the tending and nourishing of the values inherent in a free society by thousands of men and women who actually appear very little in the public eye, teachers, youth leaders, clergy, administrators, workers in factory, field, mine and shop, lies our main hope in surviving the test that is now imposed upon us.

Even if we could control or eliminate those educative agencies that work more for private than for public gains, we should not do so. Excessive control endangers the potential of a free society; elimination makes it impossible and may remove that diversity that develops character. What we must do is endeavor to be and to develop the type of individual who selects with discrimination, interprets with intelligence, and acts with conviction, and in addition possesses the capacity and courage to refine and improve the educative agencies themselves.

This type of individual can best be developed if the traditional educative agencies—the home, the school, and the church—combine their efforts to provide experiences that promote the needed skills and inspire interest in their continued use and so produce self-disciplined, self-directing people.

The school is the logical agency to act as the co-ordinator of all educative agencies in the community and to develop an explicit and common philosophy of continuing education. All people are compelled by law to attend school. All people are compelled by law to support schools through taxation. Every citizen is connected in some way with the work of the school. The school is the logical place to develop sound popular concepts of education.

In school, where interests of children and parents and business are intermeshed, there is the possibility of developing skills and attitudes needed to make future improvement and growth probable not only in the children who answer the summons of the bell but in the many others whose involvement pulls them towards the school and its work. One of the most vital uses for this potential of the school centers in the development of the complex skills of reading and in the promotion of the highly valuable desire for continuous reading and reading improvement. If the school can graduate young people who have reading skills, who know what they have, and who have the desire to continue to use them and to extend them, if the school can in the process promote interest in reading, in reading skills and their improvement in all others they can naturally interest and involve, then the school can pride itself in making the maximum contribution to adult reading and adult reading improvement.

Universities are wisely and productively assisting freshmen students towards facility and flexibility in the reading tasks upon which success in their studies will depend. Students can be motivated to take special reading courses by perplexity or failure they have experienced in earlier attempts to advance in their studies without such help. These reading courses can do much more when students come from public school education knowing that specific reading skills are part of the equipment they bring with them, equipment which they know must not rust or grow less keen. Such students will skim bulletin boards seeking the help college reading programs can give them. What is more they will know they are using the skimming technique that best functions when searching among many for one important item, and report on time for opportunity to learn to skim more efficiently.

The educational officer of a large progressive industry can use the appeal of a regular or a fatter pay envelope to lure a worker into an after-hour course to develop higher reading skills, or the change from job routine to divert him willingly to a two-week short course with like purposes. A worker has added impetus if through natural and interesting contact with the reading education of his children he has come to realize that there is much to reading and much more to be read than his own formal education had brought him to realize.

All adult reading improvement programs including the less vocationally functional programs can do more if they come in response to request from informed and forward-looking potential enrollees who predict their worth than if they are sparked only by information and forward-looking sponsors who pronounce others' need.

It is too much to hope that all adults will take part in organized courses to improve their ability and interest in reading. It is not too much, however, to expect that the public school system shall make sure that no child leaves until he has mastered sufficient skills to enable him to recognize words, understand what they mean, and to realize his responsibility to remain a continuous reader not only for pleasure but as a duty if he wants to continue to live in a society where he is free and at the same time enjoying the gratuities of the welfare state.

He must realize that the gratuites he will enjoy in the future will depend on his ability to keep up to date on current issues and to make the morally responsible decisions a free citizen must be prepared to make.

It is not too much to hope that at the same time through closer contact with parents and their meaningful involvement in their children's school education the school can develop in them the same basic concepts regarding their reading responsibilities — inspiring them to seek to improve their own reading skills and to read so they may act as free citizens.

This involvement of adults in school reading, both directly and subtly, this paralleling of child education with adult education is in one sense a frightening extra chore, in another an encouraging adjunct to our central task. We must teach all present and future adults to read. The fact that many adults are functional illiterates points up the difficulty of the task. Yet a free society will become a delusion if all citizens cannot grasp the idea at least in its broadest sense that keeping up to date is a continuing conquest, and not a gift with which they were presented at birth. Harmful tensions are created when we work with children's reading toward more far-reaching aims, with far different materials, and by seemingly new methods which parents and the public do not understand. We can encourage ourselves to accept responsibility of promoting growth in adult reading skills and habits by recognizing that so doing may bring home and school and community into a working harmony that will make our task with the children less difficult.

So to promote in both child and adult sound concepts of ongoing reading and reading improvement, the school is wise to involve the home and the community as fully as possible. Close relationship between the home and school is desirable at every stage of the educational process. It is most natural and also perhaps most vital at the level of the kindergarten and the primary school because here children are still very dependent upon their mothers, and through this dependence mothers are more aware of their responsibilities. A good primary school exemplifies in a natural way a feature that should prevail in all levels of all schools, for the parents are in almost daily touch with the life of the primary school and the teachers have personal knowledge of the homes from which the children come.

Dr. Constance McCullough relates primary school reading experience directly with college adult reading improvement. "Today parents, teachers and librarians know," she says, "that there are things to do in kindergarten which will make for reading readiness." Dr. McCullough in the same speech points out that, "Educators now recognize that the responsibility for reading growth should not be left to one period a day or to one teacher, but carried all through the day in all subjects at all levels." (2, p. 19) Education, we readily agree, is a continuous process and so is the process of becoming a skilled and interested reader. We must add realization that sound permanent popular concepts of reading and reading improvement are strengthened when parents, teachers and pupils are in close touch at all stages of education.

In the upper school the relationship between the school and home should not grow weaker as it frequently does. It is less likely to exist than in the primary school unless positive efforts are made to foster it.

One way to reduce the strain and stress that result for the child from conflict of loyalties to differing school and home standards is to increase the opportunities of personal contact between the teacher and the parents. Although parent-teacher associations and other means of improving the relationships between home and school are most valuable, the very best kind of cooperation may well spring in an attitude of mutual confidence and support between the day-to-day life of the home and of the school. If a parent feels he is welcome, his confidence is won; and once his confidence is won he will support the teacher in whatever he does. It is in this way that the values in reading which the school is setting before a child come to be understood by his parents. The better they are understood by all concerned with education the sooner school education will be able to achieve its dual purpose of providing both the child and the adult with the skills and the desire to read on.

Dr. Nila B. Smith, president of the International Reading Association, is able to show the leadership an international organization deserves partly because she has the vision and the facility with words to bring teachers of reading to realization of the values of cooperative endeavour with these words:

> . . . the master-key which will open the most doors to you in your change-making activities is togetherness. . . . In your work all of you have contact with many people. In reading especially you touch a multitude of individuals both in and out of school. If you can weld these various relationships together so that they will flow in one strong current of interest in trying out new ideas, implication will proceed easily and happily. On the other hand, if there are cross-currents, one current may negate another, stoppage may occur, and waters may become rough and troublesome. . . . (4, p. 61)
>
> It is advisable to take the parents into your confidence. . . . Talk with them individually and in groups. Explain, interpret, illustrate. Find out what their misunderstandings are and plan ways to clear these up. . . . And don't underestimate the power of the press and the platform. (4, p. 63)

Cooperative unified action is not always easy in public school education. One of the difficulties is pointed up by Dr. Mary C. Austin and Coleman Morrison in the recent Harvard Report on Reading in Elementary Schools, *The First R*, when they state that:

> The over-all picture with regard to the leadership and guidance offered to teachers by administrative officers is not bright. . . . (1, p. 9)
>
> It was obvious that conflicts over policy and confusion as to who should do what existed in many school systems, and where

> this was the case appeared to seriously harm the program and impair the services offered by administrative personnel to pupils and teachers. (1, p. 209)

The administrator is not always a good teacher. Much worse he sometimes finds it difficult to listen and to act upon the advice of good teachers, whose practical application of administrative orders is the end product of education.

Regimentation from above, lack of cooperation, knowledge, and understanding by all who have to do with education can ruin the very best reading programs designed by people who know and understand.

Even if school education could eliminate all the administrative difficulties that frustrate and confuse the people who are trying to achieve desirable results, success cannot be assured unless the universities do their share in training teachers who not only possess the skills necessary to do their job but also realize the broader concept of their task. Added to the commendable contribution places of higher learning are now making in the provision of excellent college-adult reading programs must be developing of teachers who themselves possess all the characteristics of the morally responsible citizen. For the most important thing that happens in education is when the individual teacher meets the individual pupil and that something which happens is beyond the power of the statistician to record.

The demand in education today is for high levels of understanding, for intelligent self-discipline and for a group of basic values such as can come only from those mature individuals who are constantly striving and struggling to become better informed and therefore better qualified to carry out the responsibilities they must accept graciously if they are to enjoy the security that all free men deserve and need. How far we are to achieve the aim in practice without conflict, confusion or frustration will depend in large measure upon the character and sense of values to be found in the community in which the attempt is made.

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A Permanent Foundation For College-Adult Reading Improvement

Part II—Planning In School Education For A Practical Contribution To College-Adult Reading Improvement

Miss H. E. Orchard
Department of Education
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In a September schoolyard a Canadian T.V. interviewer talked with primary school children as they began to scatter at the close of the first day of school.

"Why did you come to school today?" he asked an earnest very small boy. "What do you think you are going to learn?"

With gruff conviction and a trace of smile, the ready answer was, "To read, of course."

To read, of course—This is the dream, this is the ambition of almost every child as he starts school. It is the right of every child—to the full extent of his God-given capacity. It is to school he comes, with trusting confidence, to realize his dream, to achieve his ambition, to claim his right—to read, of course.

The school sees in the child's words implications far beyond his young thinking. The school recognizes and accepts a responsibility much broader than equipping him with adequate and flexibly functional reading skills and providing for him some tempting samples of the personal satisfactions their use makes available. The school must work to assure, too, that if the child who came first to school with confidence and conviction "to read of course", chances to meet at the close of his last day at school the question "What are you going to do now?" he will include in his answer, with the same confidence and the same conviction, "Read, of course."

To accept this important present responsibility for assuring that, as fully as possible every child graduates from school equipped to read and knowing he must, is to take on a very large task. Adding effort to help spur past graduates to more and improved reading while capitalizing on their interest in the school reading program as parents and as taxpayers makes extra demands on school personnel. Yet this potential for developing adult reading competence and responsibility, at the same time strengthening the school program, is one that should not be neglected; for the many agencies that vie for the minds and wills of people do not wait, but rather seize every opportunity for advantage.

The significance of the complex dual reading task of the school calls for thoughtful planning to use fully and now all the resources available to the school reading program both within the school and without.

Simply to outline for the National Reading Conference the plans any school system has carried out in developing a reading program would be to carry Mississippi mud to New Orleans. Most members of the Conference will have contributed to activating and evaluating the parallels of any system's plans. Nova Scotia's school system is a relatively small one, and its provincial director has a firm philosophy of the value of active participation of all who constitute the important educative agencies of home and school and community. Some details of the practical evolution of the present school reading program of our province may have value, then, since aspects of our plans give a telescopically intense and enlarged view of the contributions real and total involvement in the reading program makes to providing the will and the ways to improved school and adult reading.

When a study of research and experimentation in reading led a Nova Scotia curriculum committee to recommend the introduction of a modern basic reading program, requests for funds for materials for a changed approach brought not one, but two questions — "What's right in the new?" and "What's wrong with the old?" Thus the process of informing, convincing, and involving everyone from the Premier to the milkman had its start.

The retreading of active school personnel and adjusted pretraining of new teachers for launching the new program stressed not only the obvious and immediate values of controlled basic readers, of a multiple approach to word attack, and the motivating power of personally meaningful purpose. It became a specific goal in introducing the new program to school personnel and to the public to have all see as most vital in the new approach the potential these features gave for promoting that on-going self-education and self-direction in school and after schooling which must be for the type of person and the type of society we work to develop.

As the new program was activated, the usual means of informing and reassuring parents and less ready teachers — demonstration, display and discussion, sending home completed work, and the like — proved inadequate. Both because of these attempts and in spite of them, many people remained skeptically alarmed. Almost all were justifiably puzzled. Firmly fixed and haloed by revered tradition was the assumption that to start school and to learn sounds of letters, having learned the a, b, c's from Great Aunt Edna long before, were synonymous. From there, many believed, the child, magically sounding out the unphonetic and finding meaning in the unknown, became a good reader if he read aloud each day the same page all the others in Grade III, and so, of course, in Third Reader, read aloud before or after or with him. What is more, perfect reading of such gems as "Stick to Your Bush" and "We Are Seven", practiced at home the night before, would make him a good man of right standards. As one parent, consigning the county supervisor to Rudolf Flesch's "fringe of idiocy" put it to the teacher in front of her class, "If Miss O. would keep her fancy city ways back in the city where people can afford them, you could get on with teaching these children to read." The tensions inherent in misunderstood and unaccepted change increased.

Telling was not enough. It never is. We knew we must apply to the education of parent and public the principle we were advocating for best learning of children. We must invite and urge them to participate, to find proof for themselves, and out of their conviction to help enlighten others and continue to be enlightened. The resultant features of the Nova Scotia program that best illustrate application of the principle of full involvement toward better teaching of reading skills and their continuous usefulness both for children and adults are the activities that came to be known in our province as "The February Conference" and "The Red Journal".

It was in February of 1953 that we called the conference of representative parents, teacher supervisors, and department officials to discuss the developments in the teaching of reading brought about by increasing knowledge of reading skills and their usefulness. The conference brought together school and home that they might work together to promote appreciation of the new approach, and to develop understood and common objectives as educators.

Parents shared with school educators preparatory responsibility for having each basic topic and each frequently-posed question on the agenda introduced by one member of the conference, with all prepared to speak on at least three. Out of soundly-based discussions grew sharply-defined conclusions about how to meet the need for clarifying and developing in the process of reading education the functions of pupil, parent, teacher, supervisor and the public, about how to help each recognize the rights and understand the purposes of the others, so all might work harmoniously, reflecting aspiration for refined extended reading goals for all.

An immediate outgrowth was two committees charged with exploring the periodical press, and radio and film as means of bringing the public into the school reading program. Two major projects became the next steps towards our goal — the first, a special issue of the Nova Scotia *Journal of Education*, a Departmental periodical which serves as a medium for sharing experiences and information and reactions in matters educational, the second a series of radio programs beamed to parents and designed to answer their specific questions about primary school education where most change was then in process.

The "Red Journal", as the special issue came to be called, succeeded in its purposes, and refuted any implications of the colour of its cover. It provided acceptable explanation of the school's reading program and inspiration to make it better and more widely useful to the public as to the children, because it was a publication in which parents talked to parents, teachers talked to teachers, and department officials talked with both in the spirit and in the language of animated discussion among respected friends, discussion based on the experience of all.

Interspersed among the journal articles prepared by parents, teachers and supervisors were quotations that illustrated basic agreement of past and present thinking about children and reading and life. The quotations ranged from the advice of Comenius in the 16th century that, "every study should be commenced in such a manner as to awaken a real liking for it on the part of the scholars." (5, p. 73), through Horace Mann's 1838 explanation of why words are a more logical start in reading than letters, so the child may be "introduced to a stranger through the medium of old acquaintances" (6, pp. 520-532), to Douglass and Spitzer's concept of the school as concerned not with "closed systems and compartments of learning," but with "ideas, attitudes and skills which influence actual living both now and in the future." (1, p. 17)

Perhaps more convincing were quotations from such as Mrs. E., a parent of 3 small Nova Scotia boys, and Mrs. M., a teacher of many small Nova Scotia girls, and lists of children's books, criteria for judging a reading program, a review of past readers, and discussion of the values of oral reading prepared by school and home people together.

Into preparation of the radio series which followed, a far larger number of parents, teachers and community groups were drawn, partly because of the interest and growing understanding that came with the distribution of the *Journal* issue. Chairman of the radio and film publicity committee was a parent. A parent helped the proposed series deserve its title "The Parents are Asking" by assisting in classifying the hundreds of questions received in response to a questionnaire circulated through school inspectors to teachers and through them to parents, sifting through "How are you getting my child to recognize big words when he doesn't know his letters? What's going to happen when he wants to read words you haven't taught him?" — "What does word analysis mean, anyway?" — "John is in Grade III, but he is reading the same book as his cousin Tim who is in Grade II. Why?" — questions that proved both need and interest.

Out of the sifting grew eight basic over-all questions that became the titles of the broadcasts to be presented on consecutive Thursday evenings. The promoting, production and use of the series offered uncountable opportunities to extend and enrich the understanding of teacher and parent and public and so to promote improved concepts of reading purposes and procedures.

Parent-teacher groups discussed and forwarded suggestions in response to a request in their monthly newsletter. Teachers competing to become script-writers prepared sample scripts and so experienced the discipline of thorough learning needed to explain to others. They were urged to try out their creations on parents and friends. Parents and radio officials screened the entries. A parent member of the committee advised the selected script-writers, her suggestions partly gleaned from a country-wide study of such projects which she had headed. Advice to the studio producer, to the actors and narrator, was about school reading as much as about the interpretation of the scripts.

Anticipation of the broadcasts grew. School reading was discussed through the four Atlantic Provinces as every agency from the Farm Forum to guidance directors of high schools and the Women's Institute was harnessed to promote the series. The press, already having boosted the special *Journal* and commented on the Canadian award that year's issues of the publication received, endorsed the radio series and discussed its implications for the important duty of all to be informed and to contribute to the promotion of good reading.

We tried in the series itself to maintain a positive and direct approach to improved understanding and action first by portraying parents as interested, informed active contributors who questioned, yes, but who also responded to their children's questions wisely and offered to teachers intelligently based recommendations and help.

The series also used every opportunity to say naturally to a wide audience, something of what reading is and should be in today's life. "We want our pupils," said Mr. Hardy, a school principal in one broadcast, ". . . to use reading to broaden their experiences and interest to help them understand themselves and other people. If they do, we think they will become better citizens and happier people." (3, p. 4) "Through all this," commented the narrator in another, "Purpose is to prepare Johnny and all of the other boys and girls for an adulthood of knowledge . . . . of moral strength and emotional understanding, a maturity of mind and interests that will enable them to contribute and to find satisfactions in the society in which they will live." (4, p. 8)

Both the *Journal* issue on reading and the taped and printed scripts of the radio broadcasts continue to have usefulness in promoting better reading and teaching of reading toward that kind of adulthood, for there are always some new teachers, new parents, and others newly awakened to interest and responsibility at the stage many were when they helped and learned in these projects.

More adequate spread of information and the resolving of some problems brought more questions and new challenges in promoting sound concepts of reading. Like the small girl who said as she finished one more school task, "I suppose I still don't know as much as I don't know," we accepted the inevitable growth of new tasks and opportunities out of the completion and use of the old.

There was need for soundly objective evidence for appeal from the harsh verdicts of negative critics of the program. "Public confidence in the quality of the educational product diminishes as a result of this program so glibly foisted upon us" was the punchline of Mr. L's letter to a local newspaper, quoting others' pronouncements about the "distinct and definite failure" of the program with its books that are "mere drivel", and adding his scorn of a Department of Education "unforgivably taking advantage of childhood innocence." The many people who were confidently expending increasing effort and money in the program's development needed a definite assurance that the expenditure was in truth bringing good returns.

So there was developed a province-wide standardized testing program. "The Provincial Standards Project", now an interprovincial undertaking since its spread to two more Atlantic provinces, involves a repeating three year cycle of achievement testing of a province-wide sample of pupils in Grades 3, 6, and 8 or 9. It has provided us with an objective measure of the strengths and weaknesses and growth in the children's use of reading skills and so with a base for improving the school reading program as well as for answering our own questions and those of others objectively and logically.

It has provided, perhaps just as importantly, many opportunities to apply the philosophy of educating parents and the public through developing their deeper understanding and active contribution. The project must be explained to the boards who pay the bills and so earn the right to have report of the results and to participate in planning for needed follow-up. There are continuing opportunities to explain it to parents. A letter to the county supervisor from a small village says politely but with hurt pride "I understand Mary J. has been chosen to represent our Grade III in a test of reading. Now Mary is a smart little girl but our Sarah is just as smart and she's a good reader. Why was Mary chosen?" The supervisor's reply explains not only how the sampling was done but also how the testing may help both Mary and Sarah toward important reading competence.

On the day Mary is picked up at school to go to a larger school for the project tests, the supervisor slows at her request on passing her home so her mother can wave her good luck because "Mother says she agrees with what you said in the letter that asked if I could go. Reading's an important thing and I'm to do my best so we can really see how we're all getting along."

Another mother here, another child there, one more teacher, one more taxpayer adds one idea to a growing concept of reading improvement, contributions and benefits.

Throughout the province teachers and supervisors sought to meet challenges the Standards Project results defined — among them a need to improve some aspects of comprehension. The cover page of a 1958 County Teachers' conference, borrowing a phrase from Dr. Russell, reflected a related teachers' aim with "May the sessions inspire us to nurture children's growth in and through reading?" (8, p. 526) The Chief Supervisor of Curriculum and Research, opening the 1960 annual provincial conference of supervisory personnel, said "Common interests draw together all concerned with our schools. . . . Out of the Standards Project grew the theme of this conference . . . and our in-service theme for the year: Through the school program, full development of each child's ability to comprehend and to reason." (7, p. 1)

Realizing from the Standards Project the value of periodic assessment prompted more town and county systems to request full Department surveys. Whether or not concern for reading improvement sparked the request, the answer contained and developed this concern.

In the course of the surveys, the school board helped plan testing of reading achievement, teachers helped interpret range of reading levels, the survey team explained to children something of what they were finding out about their reading. Survey reports gave priority to observations, and recommendations pointed toward an improved reading program and to comments pointed toward a deeper public understanding of reading purpose, from practical paragraphs on "What is a basic reading program?" and "The functions of the teacher's manual" to inspirational inserts, "Since the power of the printed word is used to influence man's thoughts and emotions, his moral and spiritual beliefs . . . . if our way of life is to be maintained, we must develop in our youth the ability to select reading . . . . with intelligence, to read with understanding, and to use this understanding for his own betterment that he may continue to read and read to learn." (9, pp. 61-62) Explained in tabling the reports with civic municipal officials were reasons for giving first place to matters such as "How much opportunity do the children have to read functionally, to express their own reactions? How are they challenged to think and to challenge?"

As these varied projects have developed in the province's schools and through the province's people, each project contributing—here by little, there by much—teachers, supervisors, parents, the public have joined children in a broadening concept of reading importance and reading improvement.

Teachers have come far from a stage when many were not sure what they did not know and only suspected their need to find out, when publishing company consultants were sought to provide through the province an overview of new techniques and purposes. Many of our teachers now ask for outside leadership on highly refined or technical aspects of reading only and lead themselves and the parents, who often accept invitations to join study groups and special conferences, in discovering how the basic program may be improved.

I.R.A. Councils, born of growing teacher knowledge and concern in reading, have come through the same development—from listening and studying to leading and experimenting, from seeking suggestions to making them. Along the way an I.R.A. council weekend workshop opened to non-members with perhaps seventy-five expected, received acceptance with thanks from four hundred and three, who came and worked and sent in requests for more copies of the workshop report "So They May Read".

From I.R.A. Councils have come briefs to the Department requesting special four-session summer school programs to train their own membership, briefs reflecting growing acceptance of the broad on-going implications of teaching children to read. Recently added to the program of the provincial Summer School, attended last summer by 1,200 of the province's 7,000 teachers, is a similar program to train reading specialists and clinicians, again on request of I.R.A. members.

This professional summer school draws also increasing numbers of school supervisors, who demonstrate a growing philosophy of reading education by requesting in their four-session program twice the required semester hours for work in the language arts and choosing as electives such as "Diagnostic Techniques in Reading Instruction" and "Children's Literature". Each school term finds more of these supervisors translating their sense of reading mission into experimental programs that encompass their communities' human as well as financial resources. So begin another cycle of developing reading interest and action, and another.

Involved will be parents, who will move on, too, in their reading development. It was some years ago that a county supervisor working in a remote seacove village was summoned peremptorily by "You get down to see my mother at noon". At the door of the fisherman's cottage she was met by, "That teacher stood my Bill up yesterday and asked him how many blankets he had on his bed and what he had for breakfast. How many blankets we got is my business and what I feed my kids for breakfast is none of hers!" Grandmother rocked by the stove, Father mended net on the sofa, and the supervisor began once more the patient explanation of how the school tries to make all teaching practical, to help children learn to apply ideas from studies they make and from stories they read to their own lives. Perhaps this was what the teacher was trying to do. "Well, by Garn, we never thought of that, now. Maybe she was," and another family had a start toward a firmer base for learning and helping their children learn.

There could not be invented a better contrast to the stage at which these parents were than the parent who came to the Department curriculum section by phone a few days ago. With John in school and twins to start next year, she wanted a *Program of Studies* and some teaching guides, not to wave irately at the teacher, but to assure that their interest in John's work at home would not counteract the school's teaching. In fifteen minutes discussion she referred to John's pleasure with the Beginning Reading books she was now buying on his first teacher's recommendation; the manipulative toys their holiday trip had led them to this summer about which she planned to speak at a parent-teacher meeting, since they might help prepare for the kinesthetic approach a teacher had demonstrated as one aid for slow starters in reading; the book on children's reading for which she was wait-listed at the city library; and an offer to help prepare a series of articles for the newspaper on how children learn at school and how parents can help at home.

A city service club invites the high school students selected for their teachers' college scholarships on the basis of club luncheon speeches on "Why I want to teach" to return to describe what they are learning at college. A town news reporter has a late evening finishing copy for the article she prepares after each monthly local I.R.A. council meeting. Tonight she copes with shorthand notes about "critical thinking an important outgrowth of reading . . . linguistics . . . individual reading . . . tensions at home . . . impact of reading on world's problems", for the program featured delegates' reports from the Miami I.R.A. Conference.

The education secretary of the General Workers Union clips for his Local's education files a month's news articles headlining "Curriculum designed to inspire pupils. . . We live on the edge of the future", "Tele-Education Extension To Be Studied", "Advisory Council Appointed to Assist Department of Education", "Ratepayers Get Answers to Questions on Education", "New Teaching Increases Encyclopedia Sales". He clips, too, two letters in answer to another that had been headed "A Plea for the Alphabet". The first reply is from a Teachers' College student already wishing to clear up misunderstandings. The other is from a parent who reports she checked with the town's teachers, and looked at the eleven manuals literally full of sounds, and found Grade II children picking out long vowels, sounding beginning and ending consonants. "Perhaps," she concludes, "if more schools had visiting days, as we do, the parents would really see what the children are learning."

And so they would, for of all the actors in the rich drama of evolving reading skills and purposes, the children are the central figures, whose nurture is the best guarantee of a successful performance and a long and profitable run.

In 1948 there might have been many children who would respond as did one to a supervisor's request "Can you read this reader story for me?". The answer was a hesitant, "Yes, if you tell me the first few words". Then the child proceeded from this start with glib recital of the first page and the next and the next, gazing all the while at the supervisor and not turning a page in the reader. In 1963 there would be many more, indeed most, who would respond to "Will you read this new story for me?" as did one last month. "Sure" he said, and with a quick look through, read in the true sense of the word, letting the supervisor see the wheels go round in his eager mind by saying as he paused for the word *plenty* "There's *en*, and *t-y* is *tee*, the *pl* blend-*plenty*—oh yes, enough!" then reading on with satisfaction.

A provincial education official recently asked twenty elementary pupils here and there why they thought children should learn to read and why grown-ups should read. Quite a few thought that children should learn to read to get good marks, and that people read to get good jobs and "How else could they help us with our homework?" There was, however, promise in the comment of a Grade I girl, "Everyone should be able to read to know stuff," and of a Grade II boy, "Things keep happening all the time. People should read to find out about other people." A twelve-year-old said, "Reading goes with thinking", and a nine-year-old, "Reading gets me out of bad thoughts and makes me feel good."

There is room in the school reading program for children to grow in and through reading. So is there room for all others to grow by becoming actively involved in the school reading program. If in each school system no opportunity is considered too small to be worthwhile, no challenge too large to be met, practical plans for the school reading program can become practical action toward improved college and adult reading, and so toward the ideal ever-renewing society.

Crucial to this ever-renewing society, Dr. John Gardner, President of the Carnegie Foundation, says are "qualities of youth:

vigor, flexibility, enthusiasm, readiness to learn. . . For society's continued vitality we need the creative individual who thrives on freedom. Not trapped in . . . techniques . . . or routines of the moment . . . not the victim of fixed habits and attitudes . . . not imprisoned by extreme specializations", he is "the self renewing man for whom the development of his own potentialities and the process of self-discovering never end." (2, pp. 93-94)

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The Secondary School's Role In Developing The College Preparatory Reading Program

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The complexities of modern living have increased the demands of adult reading skills. It is no longer adequate for adults to possess minimum reading ability. The fact that adult reading techniques can be improved and developed to superior levels is evidenced by the success and popularity of reading improvement courses in adult education centers and colleges throughout the nation. Business and industry has long recognized the importance of superior reading skills among personnel, and many in-service training programs have been instituted in the area of reading improvement. Most colleges have some type of reading program and many have found the need for remedial training.

All of these reading programs at the adult and college level, and special courses offered through business and industry, indicate that specific needs exist and are being met in most cases, very successfully. It is evident then, that modern adult reading demands higher level skills. The average adult apparently does not possess these skills and therefore seeks to develop them through special training. These adults, some of them professional people holding college degrees, were never exposed to specific instruction in reading at the secondary and college levels. In fact, formal instruction in reading seems to have ended for them upon the completion of the elementary school.

It may be argued that students are being adequately prepared to handle assignments and textbooks at the secondary level without a special program in reading. Reading skills are emphasized in the content areas and obviously growth in the facility to handle complicated textual materials is developed to some degree by the students. But this growth appears to be incidental.

Some high schools conduct follow-up studies of their graduates in college. A common question is, "What can we do to help our students to be better prepared for college?" The response that may usually be expected is, "Teach them how to read," and "teach them how to study."

College freshmen are often overwhelmed with the reading load and the sharp contrast they experience in moving from high school to college texts. What is the percentage of entering freshmen who are adequately prepared to handle the reading requirements of college courses? We would have to conclude that the percentage is as significant as the number of remedial reading courses which so many colleges have had to institute because of compelling needs. How many college reading specialists have had to listen to their colleague's cry of, "What are we running here, a college or a remedial center?" It is axiomatic, then, that an increasing number of colleges, in an effort to meet the needs of their students, have had to develop programs of remedial instruction.

The Role of the High School

The secondary school seeks to prepare all students for adult life and to prepare many for the pursuit of higher education. With regard to higher education, students must be ready to perform the tasks involved in the complex learning process. In this connection, reading becomes an all important function and represents the key to success in college.

Even with the emphasis on reading in college, business, industry, and adult life, the secondary school has been slow in developing programs of instruction to facilitate progress in the higher level reading skills. Yet the need for reading instruction at the secondary level does exist and has been recognized. In recent years the role of the secondary school in the teaching of reading has become more apparent and steps are being taken to provide this needed instruction.

It appears that as local needs are identified, programs are developed. For the most part, initial programs are remedial in nature. Only when remedial needs are being met is an interest developed in programs emphasizing the higher level reading skills. The dearth of trained reading specialists, the multiplicity of ideas in initiating new programs, the variety of instructional approaches, and the very complexity of the *total* reading needs of the secondary school, all contribute to the slow progress that is being made.

Administrators, teachers, regional accrediting associations, students, and parents, have recognized the need for a continuum of experience in reading instruction from the elementary school to the college level. Actually, many colleges in offering remedial reading are performing a function that could be well accomplished by the secondary school. That the secondary school has a definite role to perform in the area of reading instruction has been established. The reading needs of the modern high school are many and complex. The school needs to provide remedial, corrective, and developmental instruction. In preparing students for college, the school must develop suitable programs designed to help students achieve the higher level skills.

Types of College-Preparatory Reading Programs

For the purposes of this discussion we are concerned with the role of the secondary school in developing the college preparatory reading program. There are a number of ways in which college preparatory reading skills may be developed. Some approaches may be inadequate but are employed nonetheless primarily because of lack of funds and personnel trained to do the job. Yet high school students need all the help they can get in preparing for the reading requirements of college. Therefore, any attempt on the part of the secondary school to increase reading skills is worthwhile.

This writer is of the opinion that the best way to prepare students for college reading is through a well planned reading improvement course that would provide the time, materials, and equipment to conduct an intensive program under the direction of a specially trained instructor. A typical program will be described later. Since this ideal situation is not immediately possible for all schools, other less effective methods must suffice.

A brief look at some of these alternate approaches will serve to indicate some trends in the teaching of college preparatory reading skills at the secondary level.

In an effort to reach the entire student body or senior class, some schools have instituted a unit on reading skills as a part of the regular English program. In this situation the reading teacher becomes a sort of "peregrinating pedagogue." He spends a minimum of two weeks in an English class which he actually takes over for the purpose of providing reading instruction. During this brief period he helps students to develop an awareness of good reading skills and provides them with practice materials and instruction. By spending two weeks in every English class he is able to get some instruction and aid to all students. Obviously this is not the best approach but does offer some aid.

A second more effective method provides a reading enrichment program through the study hall. In this type of situation students utilize study hall time for purposes of securing instruction in reading. They are assigned to a room designed as a reading laboratory. Here an instructor helps the student to evaluate his reading needs and then places him on a type of "contract" plan where reading improvement materials are made available for independent use. The teacher then assists the student in evaluating progress periodically. Since this type of program can continue for an entire semester it is probably superior to the "two week unit" in the English class.

Although these methods are not the best, they can form the foundation for a more substantial type of college preparatory program which the school will eventually seek to develop.

There is at least one other technique which warrants investigation. At Miami Beach High School we have experimented with a project which we have entitled, "Reading Instruction as a Group Guidance Technique." Our plan here is to provide some general instruction and to stimulate interest in the development of superior reading skills. In this program, all tenth grade students are exposed to a series of six lectures evenly distributed throughout the school year. The lectures are presented in the auditorium and students take notes and also have an opportunity to raise questions in much the same manner as a large TV class would operate.

The rationale behind this technique is the concept that a knowledge of the reading process and the specific skills of good reading can serve as a guide to students in a program of self improvement. Students are directed to reading improvement materials. Since teachers accompany their classes to the auditorium for the lectures, they are aware of what is taking place and can provide opportunities for follow-up in the classroom. Teachers are presented with an outline of each program so they can prepare students for these lessons.

We are still in the process of working with the program and exploring its possibilities. As one of the physical education teachers mentioned, you can explain to a student how he should play football but this does not give him the skills. Likewise a discussion of the reading process is certainly no guarantee that essential skills will be developed. But interest in reading can be stimulated and teachers can provide important follow-up guidance. Through interesting, carefully-planned lectures employing a variety of visual aids, including the Controlled Reader, school wide emphasis is placed on the importance of reading. Eventually we hope to publish an extensive report regarding this technique.

The College Preparatory Reading Class

Returning now to the more effective approach to reading development, let us consider a typical college preparatory reading course.

Students are selected for the advanced reading program on the basis of demonstrated ability in the verbal areas. Remedial students are channeled into appropriate programs.

The developmental reading class may extend from a period of one semester to a full year. During the course students are confronted with methods and materials to develop reading skills essential to academic progress. Such a program should include:

I Efficient mechanical skills
  A. Minimizing sub-vocalization
  B. Developing proper directional attack and efficient eye movement
  C. Perceptual training

II Vocabulary
  A. Understanding root words, prefixes, and suffixes
  B. Utilizing contextual clues
  C. Employing a systematic approach to the improvement of vocabulary

III Comprehension skills
  A. Identifying main ideas and supporting details

B. Making inferences and drawing conclusions
C. Understanding the author's intent or purpose, mood, tone
D. Critical reading
E. Thorough reading
F. Reading for details
G. Study type reading

IV Rate skills

A. Developing speed of comprehension
B. Adjusting rate to purpose
C. Developing effective skimming and scanning techniques

V Understanding the reading process

A. Recognizing factors that constitute good reading skills
B. Recognizing inefficient reading and developing superior techniques

VI Utilizing resource materials

A. Dictionaries
B. Encyclopedias
C. Various reference aids

The high school developmental reading program makes provision to improve all areas of reading skills and serves the student as a forceful supplement to his academic program. In the reading class he develops effective study habits and learns to read his texts and assignments so as to gain maximum benefits from his efforts. Through the reading class he develops good literary tastes, reads with an inquiring attitude, develops a wide variety of reading interests, enjoys reading, and in effect, prepares himself for the difficult demands of higher education and modern society.

Summary

Since colleges and adult education centers have had to develop remedial and advanced reading courses to meet the needs of a technical society, it is evident that such skills have not been adequately developed at the secondary level. Having recognized this problem, the modern high school is moving ahead in an effort to provide a continuum of experiences in the area of reading instruction. Out of these needs is emerging the college preparatory reading program. Such a program seeks to develop the higher level reading skills necessary for success in college. As this program strengthens, and proves to be successful, it is expected that the colleges will then be in a position to minimize their current remedial programs and emphasize the development of advanced skills for college and future life.

Some Suggestions Growing Out Of An Evaluation Of Reading Instruction By Secondary Teachers And Their Students

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A study (7) made at Western Michigan University in 1958 shows that secondary teachers in Michigan recognized the reading deficiencies of their students and pointed out frankly that they, in general, were not assuming responsibility for the teaching of reading and were not adequately prepared to do so. It is the purpose of this presentation to show some of the needs of reading instruction at the high school level and several of the factors involved. Sporadic attempts now being made to meet the reading needs of pre-college students are briefly summarized. Four types of reading instruction and means of implementation are set forth.

Reported Need of Reading Instruction

In the study by McGinnis each of 570 secondary teachers was asked to estimate the per cent of his students possessing reading skills essential to the work required. The mean per cent was 67. It is obvious, then, that approximately one-third of the students being taught by these teachers did not read well enough to do the work expected in high school classes. The responses of 1,029 college freshmen provide further evidence to substantiate the need of reading instruction at the high school level. When asked, "Did your high school teachers show you how to improve your ability and skill in reading?" 61 per cent answered "No." Furthermore, 83 per cent said that "a high school course in the improvement of reading would have been beneficial to them." Upon entering college 30 per cent of these students reported that they were not reading well enough to do satisfactory college work. Some specific reading skills recognized by these young people as essential to their academic progress are:

1. Vocabulary development
2. Word study and spelling
3. Chapter reading

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4. Concentration upon reading
5. Problem solving
6. Critical evaluation of writer's bias and preconceived ideas
7. Identification, interpretation and evaluation of ideas
8. Adjustment of rate to purpose and difficulty of material

It is obvious from a consideration of these skills identified by the students that the high school program in reading should be designed to develop at least these minimal essentials.

Responsibilities and Educational Background of Secondary Teachers

In the study reported by McGinnis approximately 70 per cent of the high school teachers responding to the questionnaire stated that they were not expected to assume responsibility for providing instruction in reading. Furthermore, 90 per cent of the teachers indicated that while in college they did not receive any instruction on how to teach reading to high school students. In answering, however, the question, "Should prospective secondary teachers be taught how to develop on the part of their students fundamental reading skills?" ninety per cent of the 570 teachers gave an affirmative answer. From 56 per cent to 80 per cent of the secondary teachers did not receive instruction while in college or university on the subject of how to:

1. Develop vocabularies of their students
2. Teach chapter reading
3. Teach students to concentrate
4. Develop problem-solving skills in field of specialization
5. Teach students to read critically and evaluate a writer's bias and use of preconceived ideas
6. Show students how to identify, interpret and evaluate organization and relative importance of facts, data, and information
7. Adjust materials to the interest and reading levels of their students

In view of these facts, it is obvious that the majority of high school teachers are not expected to assume responsibility for providing instruction in reading, and it is apparent that they be-

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lieve that they are not prepared to do so. An analysis of the responses of 570 secondary teachers and of 1,029 college freshmen show that the latter point out their lack of reading skills in the identical areas in which high school teachers proclaim their lack of instruction.

Some Attempts to Develop Better Readers

Investigations (1, 10) show that teachers in the content fields are assuming increased responsibility for teaching reading and study skills. Teachers in some high schools are devoting specified amounts of time to such instruction. Reading teachers serve as consultants as well as teachers of developmental reading. Faculties cooperate systematically in providing developmental instruction for all students and individualized instruction for those in need of specialized help.

Some high schools devote one day a week to teaching reading and study skills in connection with assignments in the content areas. Other schools have reading laboratories to which classes are assigned throughout the year. Some high schools have courses in reading, the content of which provides half of the year's required work in English. In other schools developmental instruction in reading is provided by English teachers as a part of the language arts program. In some high schools classes in reading are scheduled for periods generally spent by students in the study hall. Consequently, no time is taken from other classes and instruction is provided in a reading laboratory adequately equipped. In general, local conditions and the educational philosophy of the staff determine the choice of plans for providing developmental and clinical approaches to the teaching of reading. It is significant that in some communities something is being done.

Knowledge of Student Background, A Factor

Teachers, in general, are fairly well acquainted with some of the psychological and educational differences of their students. They are aware of the great range of abilities and interests found within their classes. They understand the loyalty of adolescents for members of the group. Most teachers appreciate the sensitivity and insecurity experienced by their boys and girls and how overcompensating behavior is a natural consequence. Few secondary teachers, however, recognize the extent to which home environment and experiential background affect the vocabularies and reading skills of their students. Parr (8), in his study of students who were poor readers, found a lack of reading material in the home, lack of interest in reading, and little or no recreational reading during childhood. Jackson (5) found socio-economic status, family size, and parental education level to be distinguishing factors between retarded and non-retarded readers. A more recent study by Sheldon and Carrillo (9) shows that retarded readers generally come from large families of lower socio-economic status, have fewer books available, and have parents who left school earlier than the parents of advanced readers. A study by McGinnis (6) in 1963 shows that the parents of superior readers and the parents of inferior readers differ significantly in their attitudes toward certain child rearing practices, the importance of reading, the value of language development, and the importance of experiential background. These differences in attitudes suggest differences in kind and degree of mental content which children have an opportunity to acquire. Most parents prepare their children physically for a trip to the moutains by providing them with adequate shoes and warm clothing suitable for changes in temperature. Some parents also prepare their children educationally and psychologically for these new experiences by stimulating interest and by encouraging questions such as:

> How and when were mountains formed?
>
> Why are some rocks in layers?
>
> Why do the trees differ from those in the valleys?
>
> Why does it rain so frequently in the moutains and so seldom in the desert?

Family discussions can stimulate a desire for more information and can lead to an effective use of reference materials. Some parents are aware of the fact that if their children are to learn, they must have adequate background and mental content for they realize that new experiences are interpreted in terms of the old. The secondary teacher should understand that mental content [illegible] of the utmost importance because each student must bring to the printed page even more than he is able to take away. Mental content will affect his thinking, his doing, and his feeling. To a large degree the school must provide not only a place where mental content is acquired but, more important, a source of stimulation for greater accumulation and integration of content essential to thinking, doing, and feeling. This is a requirement for effective reading.

Four Types of Reading Instruction

If high school students are to grow in reading efficiency, the administration should maintain four kinds of reading instruction. (1) Basic instruction can develop the student's ability to identify, interpret, and evaluate ideas. (2) Corrective and individualized instruction can be provided for students who are reading below the sixth grade level. (3) Instruction can be designed to integrate basic skills in order to meet the requirements of the content subjects. (4) Instruction utilizing reading materials of various types can be helpful in developing mental content, extending interests, and improving literary tastes. In order to make it possible for high school students to have these experiences, it may be advisable to organize a course in developmental reading and establish a reading laboratory for diagnosis and individualized instruction.

A course, for example, known as Effective Reading can be taught to high school students so as to provide basic instruction in reading and also to show how these basic skills may be integrated in order to meet the requirements of the content subjects. This use of textbooks has been demonstrated by Carter and McGinnis in their work with college students (2, 3, 4). In other words, students can improve their reading as they do their regular academic work. Furthermore, in this course students can be encouraged to read materials of various kinds and degrees of difficulty so as to develop mental content, develop latent interests, and improve literary tastes. Flexible grouping of students makes its possible for those studying the same texts or subjects to work and receive aid at the same time. In group discussion, mental content can be "pooled" so that each individual can profit from the experiential background of his associates. It is obvious, then, that such a course can utilize three of the four types of reading instruction previously suggested.

In every secondary school, however, there are students reading at the fifth grade level and below who are in need of diagnostic and individualized instruction. In dealing with these students one is concerned with the individual, his physical and psychological background, his home environment, his personality, and his immediate and ultimate goals. An emphasis is placed upon why the student is having difficulty and upon selection and organization of treatment. This approach is primarily clinical in nature.

In addition, classroom teachers should assume responsibility for developmental reading in their subject matter fields. These teachers can teach chapter reading, develop vocabularies, and adjust reading materials to the interest and reading levels of their students. Is it not possible for teachers of English, social studies, science, and mathematics to set forth and demonstrate reading procedures and thinking skills which are especially related to these subject matter areas? Surely, they can if they are adequately prepared.

Preparation of Teachers

Data presented in this paper show that individuals should be made available for the teaching of reading at the secondary level. Suitable courses and laboratory experiences must be provided in colleges and universities at both the undergraduate and graduate levels which will adequately prepare these teachers for their classes in Effective Reading. They, as well as subject matter specialists, should be ready to show their students how to read a chapter effectively and well. They should be acquainted with the various ways of developing the vocabularies of their students. They should be familiar with the steps in problem solving and the different factors to be considered in doing critical reading. They should be able to teach their students how to concentrate, how to identify, interpret and evaluate ideas, and how to adjust rate of reading to the purpose of the reader and the difficulty of material. On the other hand, clinical work in reading for high school students achieving at the fifth grade level and below should be done under the direction of a special teacher with background not only in education but psychology, sociology, and medicine. Teaching and intern experiences under careful supervision are necessary prerequisites. This individual should be certified by the state board of education as a competent and well trained reading clinician.

Summary

In general, teachers recognize the need of developmental reading at the secondary level. The majority, however, are not required to assume the responsibility of providing reading instruction nor are they prepared to do so. Some high school teachers are developing basic reading skills and are showing how these may be integrated while the student does his regular academic work. In this paper four kinds of reading instruction have been set forth, and two procedures have been outlined showing how they may be facilitated. A knowledge of the student's background and the importance of his mental content have been stressed. Suggestions for the preparation of high school teachers who are to provide specific instruction in reading have been briefly outlined. Co-operative effort and integration of educational philosophy on the part of teachers and administrators are essential if young people at the pre-collége level are to be taught to read effectively.

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Reading Readiness For College Freshmen

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Why are colleges having to develop reading improvement classes to meet the needs of the freshmen students?

Many fail or drop out because they cannot read well, and we psychologists and educators should be concerned about the great number of entering college freshmen who score below the tenth percentile on the college entrance examinations.

What conclusions can we draw from this appalling record?

The bold fact is that our high schools are not teaching the essential reading skills needed for college work, and they need to take a sharp look at their curricula and to alter their programs to meet the reading needs of future college students.

In reviewing the reading picture of these college freshmen, I find that they have not received any reading instruction since they left the elementary school. And let me say right here, the elementary schools are doing an outstanding job of teaching reading. They are fulfilling their primary purpose of teaching the basic reading skills. Such basic skills give students a foundation upon which to build more complex reading skills for the future—high school and college.

Another appalling fact is that when elementary school pupils leave those grades their formal reading instruction terminates. Very few of our high schools give further reading instruction.

Blaming Previous Teachers

When we find students with average or above average intelligence having trouble with reading, the natural impulse is to blame his previous teachers. Thus, we at the college level blame high school teachers. Instead of blaming these overworked teachers, we college reading consultants should be working with the instructors to integrate the total reading needs of these potential college students.

It does not matter how poorly or how well high school students read; every high school teacher can help the students to read better by giving them a better understanding of the textbooks and materials required for the various courses. No matter whether previous teachers did a poor job or a good job in teaching reading, the present teacher can be helpful in developing necessary reading skills.

Reading—A Tool for Learning

Reading is their most essential tool for learning. About 90 per cent of all the studies in high school and college involve reading. In every subject matter course, students get reading assignments. They read a chapter in their textbook for the next day's class discussion. They read outside references to prepare for oral and written reports; they review a group of chapters in their textbooks to prepare for a test. Only those students who are relatively proficient readers are likely to do well and meet the requirements for the course. The students who are poor readers are handicapped educationally, and this makes learning an unpleasant experience.

The College Freshman

When high school students make the big step to college, they find that there are more demands on intellectual skills than in their previous schooling. Reading ability becomes of paramount importance, and the whole environment demands of them a higher level of thinking. They find textbooks more difficult, study periods longer, and a high level of concentration is required for achievement. Assignments are more difficult and complex, and these newcomers to the college campus must adapt their reading to meet their new needs.

The College Reading Programs

Present college reading programs stress speed and comprehension. However, I feel students lack flexibility in the content areas. Students having trouble with comprehension of specific details also lack the ability to read critically and analytically, and what is more tragic they lack confidence in their reading ability.

In reviewing studies about college reading programs, I have found that college students improved no matter what technique or material was used in the reading program. Furthermore, the majority of these programs, usually taught for one semester, were voluntary and non-credit.

Better Reading—Better School Work

After reviewing the studies made of college reading improvement programs, I have found that most of these programs stressed the following: flexibility in reading, spelling improvement, reading for a purpose, reading for main ideas and details, comprehension, critical and analytical reading, word recognition and structural analysis, and vocabulary development.

There is no doubt that the teaching of these skills at the college level is commendable, but I feel most strongly that they should be taught at the high school level. I firmly believe that college reading consultants should help the high schools to set up programs encompassing these most important reading skills.

If the high school could teach these skills in the ninth grade and then give the twelfth graders a short refresher course, our college freshmen would have a foundation for college work. There would be less academic failures or dropouts.

If high school students are not given the opportunity to develop the important reading skills we have been talking about here, they must develop reading and study techniques on their own to meet the accelerated reading needs of the college. It is a sad fact, but many of these skills they develop are inferior and time wasting. A strong high school reading program would eliminate this waste, and some college students with high intelligence now making average grades would become superior students.

Conclusions

The first months at college are critical ones for freshmen. They form attitudes concerning what a college education can mean. Unless they experience success in this early period, the odds are against them completing their collegiate careers. It is during this initial period that the freshman makes the big decision—Shall I stay in college or not? Students who cannot read usually cannot learn. The students who read poorly also do poorly in academic work. Students who read well usually do well in their studies.

It is our responsibility to help make our high school students proficient readers. Knowing the reading deficiencies of college students, college reading consultants can, in turn, aid our high schools in setting up programs which will eliminate these deficiencies.

High schools should place more emphasis upon developmental reading programs. The teaching of reading should not stop with the elementary school. It is a continuing process, and a well-prepared high school student—one who has college reading readiness—will be a successful college graduate—not an academic failure or dropout.

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Training Teachers For The Improvement Of College-Adult Reading In Underdeveloped Countries

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The best way to train teachers for a reading improvement course is to give them a reading improvement course. It is difficult, though not impossible, to teach something that you do not know yourself.

Another important training method is carefully supervised practice teaching. If a student can give a course under the close supervision of an experienced master teacher, this is an ideal training situation.

Unfortunately, it is extremely difficult to fulfill either of these two suggested training methods. In 1961-62 I was at the University of East Africa. During that time, in addition to training a number of university students, I also had one class for teachers. Thus, I was able to more or less directly train thirty students in reading improvement techniques. At the same time I was able to supervise one African teacher giving such a course. Because I knew my stay was to be limited, I then tried to write down everything a teacher would know in order to conduct such a course. This was published by Cambridge University Press in the form of a teacher's manual. It was based not only on my own experience, but also revised after I saw a student teacher running a course using nothing but the first draft of the manual. In the year 1963 over three thousand teachers have bought this teacher's manual. Here we see a factor of more than a hundred to one for teachers learning to give a course from a manual as opposed to some personal contact and experience.

Since a high proportion of teachers are learning from manuals, I might make a few suggestions to help future writers of teachers' manuals. I found the tryout experience extremely valuable. Often times there were things which I thought were said very clearly in the manual that the student teacher did not understand. I finally hit upon the scheme of saying everything three ways. One, in a plain text manner I wrote out practically the entire lecture. I would further illustrate all of the major points with some type of diagram or figure or chart. Finally, I recapitulated every main idea in a summary at the end of the chapter. In addition to suggesting specific homework assignments in the teacher's manual, I also suggested that the teacher might wish to copy the figures from the teacher's manual onto the blackboard, and furthermore, he could use the end of chapter summary as a lecture outline. Although this might seem like a high form of regimentation, my observation led me to believe that the individual teacher will still put plenty of personality and local examples into the course.

In terms of developing drill materials for the course, I was guided by several considerations. One, I wanted the materials meaningful and, if possible, of some utilitarian value to the student. Second, I wanted the material all on the same level of difficulty. This also meant having them in the same general subject matter area. And finally, I wanted the materials to be self-correcting so that the teacher would not be burdened with an additional mound of homework. My solution was to adopt the materials found in a book on world health problems, cut the vocabulary to about the two thousand word level and to break the material into about 500 word selections. Each selection was followed by ten multiple choice questions, half of which were of an objective nature and half of which were of a subjective nature.

An idea of the lecture content of the course can be obtained from glancing at the table of contents in Figure I. As a general rule, the students took one timed drill in class each week and did two homework assignments in addition to a few additional skimming drills and study technique exercises. The course was designed to last for ten weeks covering roughly one chapter of the teacher's manual each week. Two forty-five minute class periods were held each week. Some, but not all, of the classes that I held in Africa used about twenty minutes a week of tachistoscopic drill.

The results of eight weeks of training can be seen in Table I. The average gain for 100 African students was 147 words per minute (80 per cent appreciation). The comprehension score gained 12 percentage points.

The African students' gains compare favorably with American students taking the same type of course, but using more difficult drill materials.

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FIGURE 1

Contents Of A Reading Improvement Course

1 The Importance of Reading Faster
2 Common Faults and Eye Movements
3 Comprehension
4 Units of Meaning
5 Skimming and Reading Flexibility
6 Improvement Patterns
7 Study Techniques and Factors in Memory
8 Vision
9 Phonics
10 Vocabulary and Continued Reading Progress

TABLE 1

Results of an 8 Week Reading Improvement Coure in Africa N = 100. Tested on FASTER READING A DRILL BOOK.

	BEGINNING	END	GAIN OR LOSS
SPEED	186 WPM	383 WPM	147 WPM (80%)
COMPREHENSION	61%	73%	+12%

TABLE 2

Results of an 8 Week Reading Improvement Course in Los Angeles N = 106. Tested on the IOWA SILENT READING TEST with modified directions.

	BEGINNING	END	GAIN OR LOSS
SPEED	260 WPM	492 WPM	232 WPM (89%)
COMPREHENSION	72%	70%	—2%

Analytic Philosophy And The Structure Of Theories

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What is loosely called "analytic philosophy" appears to be more nearly a program and set of methods for doing philosophy than it does a school or system of philosophy. Indeed, some analytic philosophers seem to distrust or even deplore systems and isms. Granting some noticeable differences in analytic methods, analytic philosophers seem to agree that methods of analysis may be profitably applied to a wide variety of problems. Analysis cannot, of course, furnish matters of fact or truths about events in the universe. Analysis is not a substitute for research and science, but rather an aid to them. The chief contribution of analysis is perhaps to be found in clarification of linguistic and logical problems.

There are a number of points where the interests of analytic philosophers and reading specialists may be similar. In a short paper, however, it will be necessary to limit discussion to only a few points where common interests may be found. As a result, this paper will be devoted to a brief and somewhat over-simplified discussion of meaning, laws, explanations, and theories. The general conception of philosophy that will be illustrated has been called "logical positivism" and "logical empiricism." Similar, though slightly different, interpretations of positivism and logical empiricism are found in books by Ayer (1), Pap (12), and Hospers (9), and in an article by Broadbeck (6). Some outstanding works are also found in books edited by Ayer (2), Barrett and Aiken (3), and Feigl and Broadbeck (8). Some criticisms of positivism and empiricism will be noted and some questions will be raised concerning the prospects for theories in education. Finally, a brief sketch will be presented to illustrate a modified view of theory that may be applicable in education.

Meaning

There are many degrees and kinds of meaning, but in this paper meaning will be limited to cognitive meaning, that is, to the meaning of propositions which can be judged as true or false. This limitation is imposed because logical empiricists strongly suggest that non-cognitive meaning serves no useful function in science.

The logical positivists viewed words as "atoms" of meaning and sentences as clusters of word meanings. Words were thought to have meanings because they were labels for things. "Things" were broadly interpreted, however, to include logically possible and imaginary things as well as physical things. This denotive and atomistic conception of meaning does not appear to be widely held today. Though cognitive meaning is still stressed over other kinds of meaning, it is more generally recognized that words derive their meanings from contexts of use.

Just as words were thought to label things, sentences were viewed as labels for states-of-affairs, be they actual, possible, or imaginary. Sentences that expressed propositions were thought to make assertions about states-of-affairs. A proposition denoting a state-of-affairs that was actual was called "true," and one denoting a state-of-affairs that was not actual was called "false." Sentences denoting no states-of-affairs at all were termed "meaningless." Questions, commands, and expressive or evocative sentences denoted states-of-affairs, but made no genuine assertions about them. Although these sentences served certain language functions, they had no cognitive meanings and no bona fide place in science.

Assertive sentences or propositions were thought to be of two distinct kinds. One was called "analytic" because the logical or complete predicate merely reaffirmed the meaning of the subject. For example, "Birds are birds," or "Matter is that which occupies space." It was said that one could judge and know these propositions to be true merely by analyzing the meanings of subject and predicate terms. Statements of this type could not be denied without self-contradiction. They were thought to inform us of the meaning of terms, but to assert no matters of fact about things.

Propositions of another type were called "synthetic" because the logical predicate added something to the meaning of the subject. For example, "It is raining," or "Men sometimes tell lies." The truth of such statements could not be determined by analyzing the meaning of terms. Denial of the statement was thought to involve no self-contradiction. A synthetic proposition was judged to be true or false only by recourse to empirical evidence about the thing(s) in question.

Although it was admitted that some statements were implicitly analytic and that it was sometimes difficult to tell from a context whether a statement was analytic or synthetic, positivists held that the two categories were distinct. The line between analytic and synthetic was viewed as a hard and fast one. Any statement partaking of both was thought to be confused and meaningless. Statements that were alleged to have the logical character of analytic statements and the factual content of synthetic statements were labeled "metaphysical nonsense."

Numerous arguments have been brought against the positivists' distinction between analytic and synthetic. Some of these arguments are reasonable, particularly those challenging definitions of analytic and synthetic in terms of meanings of subject and predicate terms. Various proposals have been made about redefining "analytic" and "synthetic" so as to preserve or modify the distinction. Some of these proposals have considerable merit. However this may be, the distinction is often thought to be a useful one that is generally observed in the sciences. (10, p. 331)

Laws and Explanations

According to positivists, the laws of logic and pure mathematics are all analytic because they merely assert equivalences. Scientific laws, on the other hand, are synthetic because they are *descriptive* statements which makes assertions about states-of-affairs. Scientific laws are established by induction; by generalization from perceived cases, not by hypothetical and deductive reasoning. To be sure, hypotheses are often formulated and validated deductively, but they can achieve the status of law only by being tested experimentally. Only through experience, primarily controlled experimentation, can we tell which of many logical possibilities are actual states-of-affairs in given situations.

A descriptive law is a generalization from *n* cases under a particular set of circumstances that is put in a universal form—"all." This form is used to allow the law to apply to other cases of the same class not contained in the sample. This form also may presuppose the principle of the uniformity of nature. The law, though truly descriptive of all cases in the sample, may not be true of other cases of the same class under similar conditions. Conditions of time and place can be ruled out because science is not concerned with particular or unique events. In this way, relevant cases to the contrary under the same conditions (excepting time and place), can falsify the law. A generalization which is not falsifiable in this way has no place in science.

Laws are used primarily to predict and explain phenomena. A law that predicts nothing cannot be falsified. A law that is not falsifiable would very likely be useless for explaining phenomena. Explanations, as opposed to reasons and excuses, are a form of logical demonstration that provides a convincing answer to a *why* question. Consider the following explanation and notice its logical form.

> Why does this substance conduct electricity?
> All copper conducts electricity. (explanation)
> This substance is copper.
> Therefore, this substance conducts electricity. (Thing to be explained) (9, p. 180)

This form shows that an explanation consists of demonstrating that a particular thing or class of things is an instance that is encompassed by a general law. If general tendency statements were used in place of laws, the things to be explained could not be deduced from them.

Statistical laws, however, may sometimes be used for explanatory purposes. Where general laws of science often assert *invariant* and causal relationships between phenomena, statistical laws assert only *invariable relative frequencies*. (10, p. 77) In this sense, statistical laws furnish only proximate premises for deductive explanations. (10, p. 77) Consider the following example.

> Why does one sometimes draw an ace on the first draw from a deck of card and sometimes not draw an ace after repeated draws from the deck?
>
> In all cases the probability of drawing an ace from a randomly stacked deck of 52 cards containing four aces is one out of 13.
>
> This is an honest deck of randomly sorted cards.
> Therefore, the probability (relative frequence) of drawing an ace is one out of 13. (Things to be explained)

Despite the use of the word "why" in the question and the word "all" in the law, the explanation does not answer a *why* question. It does not explain why we draw an ace or fail to draw an ace. It merely tells us the relative frequency with which we might expect to draw an ace. For these and other reasons, statistical laws are thought to be weak and only proximate explanations of phenomena.

Theories

Scientific theories may be described in different ways. The following description is offered as a rather basic one to which more detailed descriptions will be added.

> . . . theory, whatever else it may be, is primarily a logical framework. That is, theory consists of classes of statements and rules for their manipulation. Generally speaking, there will be at least two classes of statements deductively related to each other so as to imply another class of statements. In this sense, there can be no theory of particular or single events. Theories are not statements of fact, statements of general tendencies, or a statement of some one general law. . . . A theory is usually thought to be adequate to the degree that it is comprehensive enough to account for relevant facts or cases, internally consistent, and employs as few basic terms as possible. (11)

One class of statements asserts meanings of theoretical terms and/or relationships between and among them. This class of statements may be called the "dictionary" (7, p. 290-291) or the "calculus" of the theory (5, p. 972). Another class of statements asserts relationships between and among phenomena. Statements of this class are law-like statements that may be called the "hypothesis" of the theory. (7, p. 290-291) Taken apart from statements of the first class, however, they are not meaningful or provable. Although they may be true generalizations, they cannot be proved or deductively explained except in relation to the "dictionary" or "calculus" of the theory. By definition and deduction, terms of the first class can be related to those of the second class so as to derive a third class of statements—usually one specific statement that necessarily follows as a conclusion. The rules of deduction are those of logic. The statement deduced can be called a "theorem."

If statements in the dictionary or calculus be viewed as strictly analytic, then they merely interpret theoretical terms. However, if the theorem is repeatedly confirmed by empirical evidence, there is a tendency to look upon statements in the dictionary as higher level laws. This view would suggest that the dictionary was not strictly analytic, opening up the possibility for metaphysical statements as first principles of science. On the other hand, if the dictionary is strictly analytic, then it is quite possible that theoretical terms may not be defined in ways consistent with experimental observation. Logical empiricists have attempted to avoid these difficulties in two ways: (1) by using operational definitions, and (2) by employing models as second order interpretations of theories.

Operational definitions can be challenged in a variety of ways. Though they are supposed to link the theory with observable materials, it does not follow that the theoretical terms as expressed in the theory will be synonymous with the same terms used in an observational sense. (10, p. 350-351) If theoretical terms could be defined in terms of observable characteristics, then what is called "word-to-thing" definitions rather than operational definitions would be more precise. Finally, operational definitions are not really definitions at all, but merely circular statements. (13, p. 440-441)

The positivists' view of theory may be characterized as largely a view of theory from the perspective of physics. The dictionary of the theory is either analytic or employs operational definitions. The hypothesis consists of laws or law-like hypotheses stating invariant causal relationships. The theorem or one of its corollaries is directly testable. In some cases, a model or second order interpretation of the theory may be used to reduce the theorem to a better understood and simpler context of verification.

The positivistic conception of theory, although representative of some theories and generally informative, is not adequate. It is not an adequate account of some theories in physics, particularly those of a statistical nature, and it is obviously a much too narrow conception of theory in the biological and social sciences. It is questionable whether a theory in education could be constructed that would measure up to the positivists' conception. A broader and more adequate conception is, therefore, desirable. As an alternative to the positivists' view, the following conception of theory and model seem worthy of critical examination.

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The dictionary of a theory may be viewed as a calculus. The calculus will then define theoretical terms contextually by the way they function in the language by which the system is expressed. (5, p. 972) The calculus may be stated in either ordinary sentence form, or in a more symbolic form. The latter, where practical, is more preferred because it is more precise. The hypothesis of the theory may be expressed in law-like statements, including statistical laws. By definition and deduction a theorem may be derived. Perhaps the theorem will not always or necessarily follow as a valid conclusion, but sometimes may reasonably follow as one of the most highly probable conclusions that could follow from the relation of the calculus to the hypothesis.

In many cases the theorem will not be directly testable without further interpretation. Such interpretation will be needed to assure that the theorem is made consistent with experimenal observations, some of which will likely be made in the contexts of better understood disciplines or theories. For example, a theory of reading could contain a calculus contextually defining theoretical terms such as "comprehension," "word recognition," and "readability." Statistical hypotheses may assert invariable relative frequencies of reading phenomena. By definition and deduction a theorem could be derived. The theorem may need to be interpreted in terms of better known variables in psychology or the behavioral sciences in order to be tested, that is, interpreted in terms such as "stimulus," "response," and "reinforcement", or in terms such as "feedback," and the like. To achieve this kind of second order interpretation, a model is needed.

Models are of many types—physical, graphic, and mathematical, only to mention a few. The term "model" as herein used will mean "a second order interpretation for the calculus of a theory." (5, p. 973) The best second order interpretations will be mathematical, and the next best will be statistical. Physical or graphic models may also be used for illustrative purposes. The traditional statistical model described by R. A. Fisher and employed by some statisticians seems to be self-contradictory (4, p. 129), but consideration of it and alternatives to it are beyond the scope of this paper. It is assumed, however, that most models for educational theories will be statistical ones.

Ideally, the model for a theory should be isomorphic. That is, there should be a one-to-one correspondence between elements of the model and the theory. (6, p. 437-438) (4, p. 90) Mathematical or statistical models are no exception to this rule. The deductive structure of the model should be identical with that of the theory and is the only feature of the model relevant to an understanding of the theory. (5, p. 973) The model is, therefore, an analogue of the theory.

This last conception of theory and model appear to be consistent with recent developments in logical empiricism. They are based upon a contextual view of cognitive meaning. They neither presuppose nor rule out a distinction between analytic and synthetic propositions. If the distinction is maintained, then it will be viewed as relative and contextual. Operational definitions will not be needed. Statistical laws may be used in both explanations and theories. Although the essentially deductive structure of explanation and theory will be stressed, the possibility for explanations and theories that are not strictly deductive is admitted in cases where the theorem is most probable, or where it is one of a very few that could possibly be derived. Such explanations and theories are, of course, weak. Neither the conception of theory nor of its model is limited to physical sciences or mathematics. Perhaps such a conception of theory and model would be applicable in a field like reading.

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On The Psychology Of Reading

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In the Eleventh Yearbook, Kingston (8, p. 20) defined reading as "a process of communication by which a message is transmitted graphically between individuals." The treating of language processes as parts of a communication system analogous to a mechanical system is an outgrowth of advances in communications engineering. These concepts of communications theory, especially their mathematical elaboration, do not always fit well the psychological situations but the implications of the ideas are so intriguing and seem to have such potential for explanation that many psychologists have not been able to leave them alone.

The most common classification of communications systems involves five components — a source, a transmitter, a channel, a receiver, and a destination. Here, I refer to the operations of the source and the transmitter as encoding and to the operations of the receiver and the destination as decoding. Our system of graphic symbols encoded into and decoded out of the neurophysiological code of the organism is the coding operation. The graphic symbols themselves are the external display, and the figure and ground, in the case of reading, is the channel. By the psychology of reading I mean the scientific study of graphical decoding operations in the human organism.

Such a scientific psychology of reading is difficult to come by. Not the least of the problems of the psychological thinker is the pervasive idea that reading is a human sort of thing of such a nature that it is unpredictable, unmechanical, even unmeasurable. This attitude is expressed in many ways, some subtle, some not so subtle as the following:

I think that I shall never see
A calculator made like me.
A me that likes Martinis dry
And on the rocks a little rye.
A me that looks at girls and such,
But mostly girls, and very much.

A me that wears an overcoat
And likes a risky anecdote.
A me that taps a foot and grins
Whenever Dixieland begins.
They make computers for a fee,
But only moms can make a me. (10, p. 111)[1]

A cognition involving not only a psychological but also a biological half-truth. Such sentiments are not at all proper for a psychologist studying reading, for here the search is explicitly for the predictable, the mechanical, the measurable. Other considerations are for philosophy or for art. As psychologist one does not concern himself with the whole person, but only with that part of the person which with simplification can be shown to exhibit lawful behavior.

Not only must the psychologist ignore popular assumptions that the reading process is scientifically unanalyzable but he must overcome biases in his own training. Reading processes are largely covert. Since the introspectionists, psychologists have not been comfortable with covert processes.

The psychologist does not feel uncomfortable in dealing with the auditory display, which we call speech, for he treats the display as an overt behavior directly related to the source. Thus Skinner (11) labels speech, and other overt acts, as verbal behavior but excludes listening from this category. If we consider carefully however, we see that speech and writing are but the *end* products of an encoding operation; they are not complete displays of that operation. They are only the part of the encoding operation which has potential for subsequent decoding operations. There is no reason to assume that we can learn more about the total speech or writing act from the external display of speech or writing than we can learn about reading or listening from the same external display. In studying any part of the language process the psychologist has been restricted largely to the message in transit from one organism to another. There seems no virtue in considering these messages in transit as outputs only. As elements in the channel of communication these messages are at once both output and input. It seems valid to look either way along the channel of communication, back to the source of the message, or forward to the

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1. Copyright 1959 by Mercury Press Inc. Reprinted from the Magazine of *Fantasy and Science Fiction*.

destination of the message. In either case, the primary interest of the psychologist is not in the message in transit, but in the originator and destination of the message.

Whatever inferences psychologists make from the vantage point of the channel of communication, the inferences are directed toward those "black boxes" we call human organisms. The "black box" is another term originating in engineering. It describes a problem situation which contains an unknown "machine" with input and output connections. The problem solver may vary the characteristics of the input and measure the effects on the output. He cannot open the box. From his knowledge of what went in and his measurement of what comes out he is to deduce the internal operations performed in the box.

The psychologist dealing with his problem cannot be sure of the operations that are "really" performed in the box. He can only be sure that he has an analogue. Although he is in contact with the covert only by inferences he is able to draw from the overt certain assumptions must be maintained if the psychologist is to remain scientific. How easy it is to stray from these assumptions is illustrated by this quotation from Wendell Garner's otherwise insightful book *Uncertainty and Structure as Psychological Concepts.*

> The signification of a word is the actual identifying relation, and it cannot exist in lesser or greater degree. It is simply a statement of the nature of a relation and while the nature of the relation can be changed, this change is qualitative and cannot be quantified. To a child, the signification of the word *honesty* may be very simple, while to an adult it may be very complex. But this change is not one of quantity of signification, but rather of quality. (6, p. 142)

Now whatever the signification of a word is, as psychologist we should assume it is a state of the organism and as such must be a physical state, in principle reducible to quantity or form, or to sequences of quantity or form. That is, in the broadest sense it must be quantifiable unless extra-scientific assumptions are made.

Because the obvious approach to all language study is along the channel of communication with its "public" content, the psychologist studying reading shares an interest in language in transit with several other disciplines. Discoveries in these related fields while providing many analyses suggestive to psychological thinking, may also distort the proper psychological approach to reading. The linguists for example share several concerns with the psychologist. There is a basic difference, however in the direction of the effort exerted. The linguist is not ordinarily interested in the question, "what does this language sample imply about the source or the destination of the message?" He asks rather, "What does this language sample imply about language samples in general?" The linguist ordinarily assumes that his task is accomplished when he demonstrates the lawfulness of the language display itself.

A recent examination of reading from the linguistic point of view while appearing to contribute to reading instruction could misdirect the psychologist. In his book *Linguistics and Reading*, (4), C. C. Fries develops the position that reading is a substitution of a printed display for the previously learned sounds of the language. The assumption is that, organismically, graphic symbols encode verbal symbols. As the sounds have been related previously to semantic structures the semantic structures already learned are transferred directly to the written cues. The thesis implies that anyone who can talk can read and those who talk but do not read are the victims of inadequate instruction in transferring graphic symbols into sound symbols. For all I know this is an acceptable hypothesis, but the point here is that Fries gives the impression he is dealing with linguistic fact while he is actually stating an untested neurophysiological hypothesis. Accepting the hypothesis is tantamount to saying the psychology of reading is the psychology of speech once the word is matched with the sound it represents.

Fries goes on to draw the implication that the teacher of reading is not concerned with "meaning" as such. Perhaps it would be fairer to say Fries believes the "meaning" is already there, as a result of previous verbal experiences, so the reading teacher does not need to be concerned. Whether this absence of concern for meaning is proper for the teacher of reading or not, the psychologist interested in decoding operations of the organism is concerned. He assumes meaning must be represented in organic tissue or be a result of states of the organism. Just as the structures which make reading possible are coded organic structures, the structures which make meaning possible are coded organic structures. The reading process is not completed until the organism has determined if the message has meaning. I use this phraseology advisedly.

Meaning, as I think of the term, is the result of the application of prior codings of the organism to the present decoding task. The prior codings of the organism do not seem entirely dependent on input sources external to the organism. That is, the internal system seems to be productive of new input to the system. External inputs into the system are interpreted by previous external inputs plus internal reorganizations which have occurred.

A message is communicated as the coding of the message approaches relevant coded structures within the organism. Communication by reading depends upon equivalent states in source and destination. Under certain circumstances a message may be meaningful without communicating. The written display may activate structures in the receiver not congruent with structures the same coding activates in the source. These activated structures are under the control of the internal organization of the destination rather than under the control of the organization of the source of the message. The popular terms for this condition are "misreadings" or "variant readings."

There is no theory of language worthy of the name. Until there is, of course, there will be no adequate theory of reading. As one looks at reading research for aid in framing such a theory he gets the impression of intense interest and activity but little consistency of direction. Traditional approaches have been barren as far as theory is concerned; current approaches are "far out" and who can tell what will become of them. The approach I prefer is based on a result that keeps cropping up in many studies, in many disciplines.

Language, on the one hand, is highly redundant. By developmental criteria, the structure of language is easily learned. The redundancy of a third reader is about the redundancy of a simple adult text. The redundancy of a fifth reader approaches the redundancy in average adult texts (1). The three-year-old fashions many structurally correct sentences. Certain language elements are tied down early, and these elements tend to remain invariant. They seem to function in some fashion as a frame on which to hang other elements carrying lexical information.

On the other hand, abundant stores of lexical information take much longer to acquire. The lexical unit is many times unique to a context but the most infrequently used item of information once learned can be made to appear at the appropriate time though kept under cover for years.

This sort of dichotomy of language elements has been widely noted. Colin Cherry views language as a set of constraints and theorizes that these constraints may be categorized as operating at two levels of redundancy—syntactic and semantic (2). Researchers in the field of the mechanical translation of language usually refer to the dichotomy as grammatical and nongrammatical (e.g. 9). John Chotlos (3) examining distributions in the light of Zipf's harmonic equation concludes, using a mathematical argument, that the words of a language should be divided into two categories, structural words which form the core or framework of the language, and content and action words that have directly or indirectly an extensional reference. The linguist, Fries (5), uses the terms I adopted for this paper, structural and lexical, and considers it possible to study each in isolation.

In attempting research in this area a few assumptions about how decoding processes operate have had to serve as my theory. When there is no king in Israel every man does as he desires. I assume that language elements in a neurophysiological code entering the central nervous system perform different functions. One of these functions is a control function involving relating incoming elements to elements already present in the internal environment of the organism. This control function seems to be a property of the structure of the language.

I imagine the structural part of language to be in a different system from the lexical elements of language. One bit of evidence here is that structural units are not stored with lexical units, at least, we have great difficulty in repeating intact long language sequences in the exact order in which they were presented.

I have operated with the view that language codes for the organism a progression from points of high redundancy to points of low redundancy. Points of high redundancy are points of control (i.e. these points provide directions for reorganizing and storing lexical elements). The points of high redundancy may be a few nouns for the beginning decoder — function words, punctuation, word order, and position of language element in context for the sophisticated decoder. The points of low redundancy are points of lexical information — the content or the semantic focus of the message. The analogy to the computer program is obvious. The program controlling the operation must be determined at any point in time, yet flexibility can be built into the system, even to the point of having the program alter itself. Not that the organism performs as the computer, but that the computer performs, under certain conditions, as a very insensitive and rigid, but logical organism. We can determine more accurately the nature of this simpler operation. Such a dialectic between organism and computer seems to hold much promise both for the formulation of theory and for the testing of hypotheses.

I am not recommending these assumptions to others. To date all of us have apparently missed the mark so widely that more searching among alternative formulations seems appropriate. The psychology of reading is in part beneficiary, in part victim, of the utilitarian background of the research effort: beneficiary in having a large number of people who care, who would like to see something accomplished; victim because practicality is not a prolific breeder of the imaginative. William Blake once said, "What is now proved was once only imagined." Reading theory exemplifies lack of imagination, of looking beyond what "is" to what "might be". Imagination in science must eventually be criticized by experiment, but without imagination experiment cannot come into being. We have many models and we have many investigations, but no model plus extensive fitting of the data to the model. A scientific psychology of reading can only come into being from people with a point of view who research the point of view long enough to determine its explanatory efficiency.

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PART II

Vocabulary Development: Facts, Fallacies And Programs

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Teachers and researchers alike agree (with some qualifications and variations of terminology) on the importance of vocabulary knowledge to the individual at every level of schooling and development. From this point, however, the disagreements begin. Specialists differ about the nature of language, the definition and role of a word, and about the process of vocabulary building.

This article considers language as a system of processing information received in various stimuli forms into appropriate linguistic concept patterns. This linguistic processing ability is acquired and shaped by the experiences of a human born into a linguistic community. The discussion is concerned with language development at the college-adult level.

Fallacies

Many statements, principles and procedural plans concerning the nature of vocabulary and its development embody linguistic fallacies. Some of the most important of these fallacies are:

1. A word is an entity with a fixed meaning.
2. A student either "knows" a word or he doesn't.
3. Speakers and writers have virtually complete freedom in selecting the words they use in connected speech or writing.
4. Every word in the language has an equal chance of getting into a broad enough sample of written or spoken language.
5. The frequency of a word's usage in general writing equates with the number of its meanings and with its conceptual importance in the language.
6. The reader must understand the meaning of every word he encounters.

7. Sixty per cent of English vocabulary comes from Latin and Greek.

8. A student who has had his attention called to certain common "roots" and affixes will more readily understand the meaning of unknown words containing these elements than if he had had no such training.

9. Because the most common prefixes and roots are readily distinguished and used (and on the basis of (8) above), teaching common roots and affixes is an extremely efficient way of building vocabulary.

10. Wide reading is a sure and pleasant way to build vocabulary.

11. For the college student, pronouncing an unknown word is usually helpful in ascertaining its meaning.

The above fallacies fail to take into account the nature, construction, and linguistic role of distinctive clumps of letters, each naming only one particular object or activity. Instead, words are either symbols of referent categories (classifications of acts, objects, or events occurring in the linguistic community) or they are syntactical signals. A "referent category," of course, is a *construct* signifying a rather arbitrary array of acts, objects, feeling or events.

Words and Meaning

Thus, a word is *not* an entity with *a* meaning. Few, if any, words have absolute unchangeable meanings. Rather, words serve as stimuli to call up a category of meanings, the appropriate one of which must be selected by the individual in accord with the context. Often, furthermore, the recipient can construct the intended meaning *only* by considering the word together with one or two other words (e.g. "Angle on the bow," "yes men," "red cap"). Indeed, the usual response to a word form in terms of its central category attributes may be quite inappropriate for the context [e.g. "little man," "fetch" (of the wave), "fetch" (of the devil)].

A society differentiates into many cultural roles, each having special concerns and thus a special vocabulary. (As an example, consider the central attribute of "strike" for the umpire, the labor relations arbitrator, the prospector, the aviation staff officer planning an air attack.) To the degree that a group is socially homogeneous, sharing the same concerns, there will be enough overlap in vocabulary for effective communication. For instance, the labor relations arbitrator who is an enthusiastic baseball fan and who is a military reserve officer will have a broad store for overlapping central attributes for "strike."

In addition, the vocabulary of English falls into several usage levels. The most commonly differentiated of these levels are:

1. syntactical and space-time signal words.
   These words facilitate the smoothness of grammatical construction and function as signs of space, time, quantity and direction. Beyond an occasional shaping of the meanings of other words, these words do not contribute to meaning. A number of studies made by language scholars and cryptographic personnel show that *100 words of this class occur 50% of the time in any sizable sample of English prose.*

2. words concerned with family and intimate friends. These involve private words, diminutives, elliptical syntax, allusions, heavy use of words in their central, concrete sense. As an example, compare the letters of a famous man (not written for publication) with his published speeches.

3. the vocabulary used in daily informal writing, informational reading (e.g. news), and recreational reading. Here, there is much use of words categorizing personal and emotional reactions, informal and customary interpersonal exchange, regular social and personal activities involved in daily living. This level accounts for a large portion of the running words in newspapers, magazines and "light" books but contributes little to the average college student's vocabulary needs.

4. words or word attributes used in formal writing and in instructional level reading (text books) but not ordinarily in everyday reading or writing.

5. specialized terms used by professions, trades, and special interest groups (often called "jargon").

6. words recognized when seen (either as known in some sense or as having been encountered previously) but never used by the reader himself.

7. museum pieces and archaic words, ("antidisestablishmentarianism"—dismally familiar to parents of elementary age children—and "knave"—in the sense of "serving boy"—are examples).

8. improper and taboo words. These are words considered too intense (and replaced by euphemisms as "passed away" for "died"); unsuitable for certain settings (as the use of the word "bomb" in an air terminal or on a commercial air liner); obscene, or of a curse nature.

9. personal inventions.

Therefore, because of these social role and usage level vocabularies, words always have the possibility of eliciting multiple responses from the reader or listener. Thus, a word can function *only in context.*

While the basic unit of context is the sentence, the word and sentence unit are affected by the paragraph, whole article and time context.

The meaning which a word arouses in a reader or listener varies in accordance with his interpretation of the situation in which that word is placed (the context) and his range of experience with the referent classification. If his interpretation is in accord with the context, he may be said to know the word.

"Know," however, is a relative term when applied to vocabulary. A student may:

1. be able to "read" in the sense of pronouncing the word acceptably.

2. have a vague understanding of the referent (a torpedo "blows things up").

3. be able to repeat a rote definition (without giving examples or rephrasing in his own words).

4. be able to use in one or more acceptable senses.

5. understand in several nuances involving central and tangential attributes.

In view of the foregoing discussion, the principal tasks confronting the teacher in the task of vocabulary development are:

1. aiding each student to increase the number of words he knows (in the sense of constructing appropriately precise meaning responses) together with extension of the range of attributes conveyed by each word;
2. making sure the student uses words in his active vocabulary accurately with proper regard for denotation and connotation.

A number of teaching approaches and programs have been devised to achieve the above goals. There are six which are currently in common use (either singly or in combination). While each method of course has some merits of its own, the following descriptions are concerned with their total impact in vocabulary development.

Common Vocabulary Development Methods

1. *The language history* approach seeks to alert students to word meanings by studying word origins and the history of language development. Considerable stress is laid on the romantic or picturesque meanings words once had. (Favorites for this are "curfew," "money" and "guard.") Many students are interested in unusual word origins. Some students may be motivated to pursue a systematic word study program, noting word families and taking account of synonyms and antonyms. Those students, however, who have real need of improved vocabulary will seldom go beyond the stage of being impressed by the teacher's erudition and the acquisition of a few obsolete or "bookish" responses to words.

2. *Wide reading* is considered by many to be an efficient and pleasant way to build vocabulary. By reading many books chosen from a variety of areas of interest it would seem that students would encounter new and valuable words as well as learning new meanings for words already in their vocabularies. This method, however, has three serious weaknesses. Used alone, wide reading depends on incidental learning which cannot be relied upon to produce systematic or transferable results. Futhermore, because of

the high redundancy of English and the linear nature of the language (actor-action relationship), a tremendous number of books must be read to encounter very many words outside the lower and middle range of frequency. (In a 40,000 word book, for example, 70 to 75% of the running words will be 1000 of those in levels 1 and 3. If every remaining word could be used *only once*, the student would encounter a maximum of 12,000 words under impossible learning conditions.) Also, because of the incidental nature of the learning conditions inherent in this method, the teacher has no way of knowing whether the student has acquired the precise meaning of the word in its context, has made a vague guess, or has just skipped the unfamiliar word.

3. Another type of vocabulary building program requires the *memorization of lists of words* at periodic intervals. This approach resembles the discarded method of teaching foreign languages. Teaching words in isolation is wasteful and inadequate. Rote memory is notoriously unstable. Also, this method, in spite of adjurations to "make up sentences" and note synonyms, too often leads the student to the single word-single meaning formula. "Translation English," with its glib use of pretentious or inept diction is a frequent outcome of reliance on the word list approval.

Since the same cluster of letters in English may require a number of different concept responses as the context changes, students find difficulty in using the invariant meaning approach. The resulting lack of reinforcement together with the heavy demand on rote memory makes it probable that the words "learned" (with the possible exceptions of real museum pieces) will be forgotten with almost the same rapidity as nonsense syllables.

4. Another approach to vocabulary development is *use of the dictionary*. In fact, a number of books advise this "look it up" procedure as the first recourse when the student encounters an unfamiliar word. In using this approach, the teacher reviews proper procedures in locating words in various types of dictionaries and provides practice. Because of the multiple meanings for words and the necessity to take context into account in constructing the appropriate meaning, it is best to label the dictionary as the last resort. When other means of determining meaning have proved inadequate, the student should turn to the dictionary. Recommending the dictionary as a last, rather than first, resort lessens the

arousal of guilt feeling (for not looking up the word but skipping it), prevents the fragmentation of the thought pattern and lessens the likelihood of "word pasting" (the substitution of an inappropriate synonym for the unfamiliar word).

5. Perhaps the most common method in use is *word analysis.* The student is taught meanings for the 50 to 100 Latin and Greek affixes and roots commonly occurring in English. He is trained to analyze an unfamiliar word into prefix, root and suffix (if any). From his knowledge of the "meaning" for each part, he combines the part-meanings into a meaning for the whole. From this, he infers the current meaning of the word.

Because about 40 Greek and Latin affixes and roots occur in one-fourth of the words in the Lorge 30,000 word-list and because of the large number of scientific and technical terms taken directly from or coined from Greek and Latin, this method seems to be based on the soundest rationale of all.

Unfortunately, in practice this method is highly unreliable. One student of philology observed that "if you can use it (the derivative approach), you don't need it; if you need it, you can't use it."

In Greek and Latin themselves, verbs had many variant meanings acquired during the long course of development of those languages. Consequently, a root may have from six to twenty possible meanings. Further, the force of the prefix may have been lost in Greek or Roman times, along the way from the Greco-Latin period to the present, or in English. Unfortunately, the prefix may not be a prefix at all but merely a group of letters resembling it. The following examples occurred in a vocabulary building book which uses the word analysis method:

In the lesson teaching *a, ab* as meaning "away from" with the type example being given as *ab*duct, the following words occurred, in the discussion (not, however, as part of the vocabulary to be learned): abate (ad + battuere), abet (ad + beter), abbreviate (ad + breve) and avoid (ex + vuider). (The derivations have been supplied). It would seem that the student would be hard put to determine which words had the prefix ab "away from."

As seen above, many prefixes are disguised either by changes in Latin or by passing through French. Pseudo-prefixes mislead (*im*prove—from emprouwer). Also, some Latin prefixes were signs of completion of action and do not possess their traditional meanings at all. "Commit," "ascend," and "perfect" are notorious traps of this kind.

Even in those relatively few words in which the affixes and roots have retained their "assigned" meanings, the constructed literal meaning usually gives little help toward inferring the actual meaning of the word in context. Thus, used alone, this method is confusing and discouraging to most students.

6. The *context approach* is another program for building vocabulary. This program teaches the techniques of using contextual clues to determine appropriate word meaning. Using a variety of contextual settings, the teacher guides the student to perceive a clear connection between a word and its context. (A number of studies have shown that only about half of the college students can use contextual clues effectively). Thus, words should be presented in several contexts requiring different meaning responses.

Although context determines word meaning, it does not necessarily (and often will not) reveal the meaning. Consequently, students must be taught to seek meaning in the wider context (paragraph, chapter) and to make use of inference from clues such as restatement, metaphor, example, contrasts, general line of thought, etc.

Vocabulary Development Programs in Perspective

A workable program of vocabulary development will not rely on *any one* method. Such a program will accord with the best principles of learning so that:

1. each student's vocabulary needs are acertained.
2. interest is motivated for each student so that he develops vocabulary suited to his needs.
3. opportunity is provided for each student to proceed at his own optional learning pace.
4. the program will be in accord with good linguistic principles.
5. vocabulary is studied in a natural language setting — that of the context — appropriate for the student's ability.

6. the learning materials use words of high need for the student.

7. each student immediately knows whether his response is appropriate. (If it is not, the correct answer is at hand).

8. diagnostic tools provide checks on progress and indicate need for corrective instruction.

9. the learning material deals with control and transferred word meanings arising from contexts built around various topics of interest, different social roles and varied usage levels.

10. opportunities are provided for further application of learning in a new contextual setting (because it is only through usage in a multitude of contexts that the word becomes a workable asset).

Thus, a functional vocabulary program will provide each student with words he needs in such a way that he can master the conceptual categories they represent. The program will be multi-dimensional, drawing on all of the traditional methods *where appropriate* and in ways consonant with the principles of learning. As an outcome, the student will be able to guess at meanings of unfamiliar words, using one or more methods as appropriate. He will check the guess with the meaning of the whole and (where necessary) with the dictionary. He will look for familiar words used in unfamiliar ways and so gradually extend the range of referent attributes symbolized by each word.

The Need For Enrichment Of Concept And Methodology In The Study Of Reading

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Recently, there has been evidence of a significant, and I think altogether salubrious, shift of emphasis in reading study concept and methodology. A scanning of the titles of the yearbook will reveal that beginning with the eleventh, and sustained somewhat by the twelfth (to the extent allowable by its topic), there has been more of a willingness to grow beyond the narrow empirical strictures of earlier reading study in order to think conceptually, discursively and even creatively.

I do not wish to make the comparison of this new trend with the pioneering work represented by earlier papers invidious. A change in focus is precisely right at the time because a great number of problems in making the study of reading scientifically valid had to be faced, defined and solved in the early stages. Furthermore, there is a nucleus of excellent papers that could be culled from previous conferences that would serve admirably in the definition of the empirical commitments of our study. They have focused upon matters that needed clarification before we could hope to explore the full territory of our subject.

Nevertheless, this methodology was becoming too dominant, and the narrowly empirical orientation of the study of reading improvement had often become less a conveyance to knowledge than a safe and profitless cell. Many of the papers featuring "before" and "after" test results, evaluations of questionnaires and other data and the use of tables and graphs were no longer always exercises in valid research, let alone valuable learning; they were, in fact, becoming downright dull in their painstaking efforts to elicit (or even conceal!) truisms. I should make it clear at this point that all of my following censorious remarks, directed against empirical studies, are directed against this body of papers—which don't require naming, of course — as *abuses* of the empirical method, which in itself I do not at all impugn as a methodology . . . I merely lament the abuse thereof, and the exaggeration of its versatility and importance.

There are many important questions facing us that cannot be adequately answered by the empirical method because they fall outside the spectrum of things that can be scientifically controlled, documented and reported; in addition, there are undoubtedly many more such problems awaiting formulation and even identification. It is time, for example, that we do more "field work" in reading. In addition to the exhaustive scrutiny of reading *programs*, we should begin to concentrate more on reading as it thrives, or sickens, in its natural habitat.

I have mentioned that a trend does seem to be starting in the liberalization of our inquiry. My motive behind this paper, then, is twofold: to encourage this tendency by trying to explain why it is healthy, and to suggest that we haven't yet gone nearly far enough in the direction of ideational and intellectual enrichment of the study of reading.

There is a paradox inherent to all empirical methodolgy in that the very hypothetical basis which motivates any pattern of inquiry is non-empirical. To state it a little differently: experimentation and indeed all other empirical studies are necessarily defined, directed and motivated by the making of hypotheses or postulates, and the making of these is precisely non-empirical. Hypotheses, for example, grow in the inchoate swamps of cerebration — in the undirected and unshackled play of images and ideas. Hypotheses are insights and perceptions which seem sufficiently meaningful for another part of our mind to seek their verification by putting them to the test of fact as we know it. Hypotheses grow in what might seem to be the scientifically disreputable climate of dialectic (either among people or inside our minds), argument, opinion, swift generalization, hunch and analogy or connection (rather than "distinction," which is arrived at in a later level of thinking and is usually associated, at least partially, with verification). The making of a hypothesis is (to use a term that has become almost a shibboleth) a form of "creative thinking."

I am not, of course, asking that students of reading be less "scientific", I am merely saying that the time has come for us to acknowledge, as well as further expand, the larger relevance of our discipline. As the act of writing is an existential act which is committed by whole populations of ghosts and other incomprehensibilities which inhabit each mind, so is the act of reading. It is the central genius of the existential orientation which recognizes that no human action can be adequately mapped or represented by an exclusively rational or empirical system. This is one way of saying that every happening we can conceive of is to some extent clouded and muddied by our own mysteries, and to pretend that we can account for *anything* by only one facet of our experience —the rational (which, it follows, is merely another variety of human cloud, mud, or clay) — is folly; and, paradoxically, in this context it itself becomes "irrational."

Who could say that reading is not an existential act? Who isn't aware of the fine balance of his own mechanisms — his immediate preoccupations, temper, digestion and implicit expectations, at an obvious level; but at a more inscrutable (and thus often more affective) level, his presuppositions, his deeper conatus, his situational context, his *Weltansicht?* The importance of these forces which a reader carries with him to the printed page is as great as it is immeasurable.

It is true that these forces seem to be most evident in material that is designated as having obvious "emotional content" and thus elicits responsive feeling — poetry and novels, for instance — but the geologist who throws downs a report because it just doesn't make sense to him in his present mood, or the political scientist who finds his mind wandering on page 642 because of obtrusive thoughts (when in another mood he admires the book he is reading) — these represent merely one extreme of the spectrum of receptivity in reading, which receptivity is variable from time to time with, as well as unique to each of us.

Perhaps much of the above is obvious; but if it is, how often is its truth adequately acknowledged? I get the feeling from looking at so many scrupulous, but tiresomely safe papers that reading is a phenomenon that exists without people, or if it doesn't *actually* exist without people, the author thinks it would be nice if it did. This fault is partially the result of statistical thinking, which converts individualities into abstractions for narrow purposes, whose limitations are almost inevitably forgotten the moment someone begins to build conclusions from a body of statistical evidence. This, like the philosophic substructure of empiricism in general, is an excellent example of the tendency truths have of turning false when they are believed in too much or too exclusively.

As all of the preceding comments imply, the study of reading should never be regarded as a closed system, even though as academicians we are always obliged to define the present scope of our inquiry as perfectly as we can. But definition is not compartmentalization. Neither reading nor the study of reading is an insular act, as the insular concern of many of our past reading studies would suggest. Neither exists *in vacuo;* and as one cannot ignore the importance of human variabilities and the situational and existential resonance of every reading experience, so he cannot think long *about* reading without thinking about content.

Nevertheless we speak of "reading teachers" in contradistinction to "content area instructors." Whom do we fool in asserting such a hopelessly arbitrary dichotomy? If it is our defined intention to focus upon reading as an act, we must nevertheless acknowledge sooner or later that it is always an act *with something and toward something* (viz. an act with specific content and an act directed towards understanding this content). For our present purpose, reading may be defined as a civilized means of enlarging the mind in one or more identifiable ways; and the character of that enlargement will be controlled to a great, if variable (see preceding comments) extent by the material — the content. Nowhere in the world do means exist totally isolated from materials and objects; then how can we so often act is if the act of reading can be abstracted from content?

I am saying that the study of reading as something divorced from content is hopelessly limited, and ultimately false, in its approach. And I would further state that the large spectrum of our study necessarily merges with the large spectra of the study of both language and literature, and we cannot refuse to acknowledge the relevance of these studies.

To the student of reading, one of the important aspects of the study of content has to do with motivation, whose importance in learning is beyond question, although (significantly) beyond measurement. The area that is tempting to investigate at this juncture is the whole scope and pattern of reading experience available to a child and adolescent before he enrolls in college. But this subject alone is deserving of many studies, many approaches and much research . . . and it is obviously beyond the range of the present paper. But it would be appropriate to make a few general observations about content as it affects motivation.

I assume that motivation is a part of, or an expression of, attitude; and the pivotal question I have to ask is this: to what extent are an adult's (particularly, in this context, a "young adult's") attitudes toward reading derived from the experiences he has had with reading at home and in school? The answer, while vague, is clearly one that acknowledges the enormous motivational importance of early reading, and — to go a step beyond the scope of the question — the importance of a childhood and adolescence characterized by an increasing enjoyment and enrichment of the reading experience, as manifest in the amount and variety of reading, along with both the ability and desire to read at consistently more challenging levels of sophistication.

I emphasize "enjoyment", because it is vastly improbable that one can *really* enjoy reading (in contrast to mere *saying* that he enjoys it), without its having a proportionate density of meaning for him. Conversely, it is not conceivable that a particular body of material could have great meaning for a reader — *at the time of his reading it* — without his enjoying it.

All of us remember Dr. Johnson's famous dictum: "A man ought to read just as his inclination leads him, for what he reads as a task will do him little good." Equally pertinent is the statement by the wise and benign Dr. Thorne, in Trollope's novel of that name:

> "What!" said his sensible enemies, "is Johnny[1] not to be taught to read because he does not like it?"
>
> "Johnny must read by all means," would the good doctor answer; "but is it necessary that he should not like it? If the preceptor have it in him, may not Johnny learn, not only to read, but to *like* to learn to read?" (Italics mine)

Whatever the ratio between the two causal directions of the relationship between the enjoyment of reading and the ability to read well (that is, the extent to which one enjoys it because he does it well, and the extent to which he does it well because it is enjoyable), it is clear that this relationship is sufficiently positive for us to predict that whenever we can increase a child's enjoyment in reading, particularly to the extent that he reads more than he did before, we will inevitably, although to an uncertain degree, increase his ability to read well.

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[1] I can't help noting that "Johnny" was the name of the poor inept reader in 1858, when Dr. Thorne was first published, as well as in recent years, in our more modern concern over the same problem.

What factors are present in the reading environment of both homes and schools that tend to discourage, and even destroy, reading enjoyment?

I take it that most of us would agree that the chief difficulty in the home reading environments of most children is simply that there is no reading environment, worthy of the name, at all. That is, while the parents in most homes presumably read newspapers, and possibly a few periodicals such as THE READER'S DIGEST, they do not really live in an atmosphere of *good reading*. The character of their reading, as represented by the kinds of periodicals they read, actually works against the idea of reading for enjoyment, for in reading newspapers and the typical magazine article, reading is usually regarded as only the merest means to an end — namely, fact-accumulation.

Now, I don't want to seem to double back on myself and suggest that reading is *not* a means, or to suggest that its final justification is not to be found somewhere under the rubric of "content"; but I do want to make the point very strongly that content should be regarded as the material for a full existential response — as nourishment, in short, for the total psyche. Fact-accumulation is not the rich experiencing of content, but precisely what its name says: the accumulation of facts which will justify the time spent (or "lost") in reading at some later date when these facts can be used . . . or in the less definite sense justify the time spent by helping the reader become a "better-informed" person.

Such an atmosphere as this, then, is not a positive environment for the growth of enthusiastic readers. In contrast to this situation, which we can assume with lamentable certainty is representative of the majority of our homes, is the family environment that encourages enthusiastic readers — a family whose members read from a rich and varied store of books and take no pains in concealing the fact that they enjoy reading, and that reading is to them far more than mere fact-accumulation (although it is surely that, too); it is also argumentation, discovery, comedy, tragedy, dialectic, adventure, etc. A child in such a family can grow up realizing that his life can be both enriched and clarified in countless subtle ways by his participation in this ceremony of knowledge; and he can learn that all reading is a mirror held up to his own life.

It is impossible, of course, to talk intelligently about the role of our schools in helping to nourish enthusiastic readers, because our schools are doing so many different things with regard to the subject.

Certain generalizations need to be made, however, with the understanding that the practices to which they refer are deleterious no matter where they are found, and need to be eliminated.

One of these practices, which is clearly thriving today after a half-century of jeremiads from the progressive educationists, is the authoritarian and punitive attitude of far too many teachers. Many a sensitive child who, had he been taught intelligently or even left alone, might have learned to love reading, has been driven away from books by the grim and unimaginative drill of an early teacher. (One does not have to be a depth-psychologist to see in such teachers the mechanisms of inferiority and insecurity working . . . frequently combined with a deep and secret hatred of reading, of course.) Some of these students will later turn to comic books and read them compulsively and happily even into their high school years, as if in retaliation to the hated *imprimaturs* of the school. Such teachers as these often pontificate concerning the importance of literature, and it is only natural that the hatefulness of their approach should be transferred to the subject of literature itself.

Another important error in the teaching of literature might be termed "the historical error." There is such a strong tendency among us to view things chronologically, that it seems fitting that an earlier work should be read before a later one, merely because it came first in time. Obviously, this is nonsense. The pattern of all learning follows a line of growth from the known, or the familiar, to the unknown — which is assimilated into the mind by means of translation into analogous ideas already existing in the mind.

Thus, the logical pattern in a child's development of literary growth would extend from simple stories and poems which reflect the contemporary world (always adjusted to his general level of comprehension, of course), which he is most familiar with, to literary works of the past, which demand both a historical knowledge of the times as well as the imagination and mental flexibility to understand the differences in thinking and feeling of such times.

Clearly, it would be unintelligent to use this idea as a kind of procrustean bed and be enslaved by an inverted chronological pattern, so that young people would be asked to read the novels of George Meredith or Thomas Hardy, before they read *THE ODYSSEY*, simply because these novels are "nearer in time," and reflect a more familiar culture. Obviously, the degree of sophistication must be considered as well.

As a reader learns to cope with works that are difficult because they reflect alien cultures and values, he might *pari passu*, learn to read into higher levels of sophistication among contemporary works. There are some books, however, which seem to form a unique class of perennial favorites for children (and frequently adults) and do not require a deep cultural understanding of their times for enjoyment. I am speaking of such books as *THE ODYSSEY* (in a modern translation, of course), *THE SWISS FAMILY ROBINSON, LITTLE WOMEN, ALICE IN WONDERLAND* and *TREASURE ISLAND*.

Even after such an incomplete discussion as this, of forces which are inimical to good reading, we might nevertheless raise the question of what should be done.

With regard to teachers, the facile answer is that we simply need more gifted teachers for our public schools. Equally facile is the solution of getting more parents, themselves, interested in reading, so that their homes can be atmospheres of learning.

At bottom, these obvious solutions are in themselves matters of education — the education of the public in the enormous importance of reading for the total intellectual and emotional growth of individuals, as well as the perpetuation and growth of our civilization. As students of reading our responsibility is to clarify the problems and define alternatives. What kind of reading is really "best," for instance? Granted that different kinds lead toward different goals, there are surely generalizations to be made concerning this question.

We have all read lists of "recommended reading," published by various authorities, ostensibly to help young people prepare better for college. In spite of the broad circulation of such lists, I have seldom encountered students—even bright ones—who have read many of the selections, or have otherwise paid much attention to the lists. Clearly, we are missing something.

For one thing, the lists are unilateral — they come *ex cathedra* from teachers or professors, and thus they come dressed in the drab clothing of the assignment, of the discomforting, vaguely moral exhortation to "read this, or else." The student might well fear that the list of recommended books will have as little to say to him about the life he is living now — excitedly, anxiously and ignorantly — as most of his past assignments have.

According to Plutarch, Solon did not simply make laws according to what he thought men should do; but he first looked at men, and then decided what laws might obtain among them. Such wisdom is often lacking in our educational milieu. I am not saying, of course, that we should recommend comic books and Mad Magazine, simply because statistically they rate highest in popularity among high school juniors . . . any more than Solon intended to make laws simply to keep men doing exactly what they were already doing anyway. It is essential, however, for us to be realistic. To take a good close look at our audience — our young people. We must seek to understand the myths and the *Weltansichten* — the world perspectives — their reading represents, and encourage reading that might somehow bridge the world of enlightenment, as we know it, with the world inhabited by these young foreigners growing up around us, whom we are dedicated to educate.

The scope of the topic is great, while this paper must remain short. In encouraging our recent tendency to liberate ourselves as students of reading from the imprisonment of only one methodology which focuses upon only one aspect of a very complex experience, I am asking that we have the courage to take risks so that we might achieve more and more new insights. I am asking that we be more creative, because the importance and dignity of our subject demand it. I am also asking that we range throughout the full purview of our subject, without fear of encroachment upon other disciplines and without anxiety that in the study of content we are somehow betraying our own specialty. The simple fact is, there is no reading without content . . . one can't read, without reading *something*: and the character of the things one reads, particularly when he is young, has a great deal to do with his attitude, motivation and consequent growth in reading power.

It is important, for purposes of perspective, to admit that the criticisms I have made concerning the cramped and unhealthy compartmentalization of our early reading study could apply, *mutatis mutandis*, with equal force to many other higher academic disciplines. When a study becomes so specialized that it ceases to have, or ceases to convey, relevance to other disciplines, there is a dangerous fragmentation of thought. Granted that specialization is a practical necessity in view of our limitations as individuals, there should nevertheless be in every specialist some touch of the generalist — else how will he be able to relate and apply what he knows to the larger problems of life?

I sometimes think, when I am faced by such intellectual timidity as characterizes much higher education, that a *little* pride would be a good thing—even a little reckless arrogance, perhaps. We need not echo Sir Francis Bacon, and "take all knowledge for our province"; but it would be excellent for us to venture occasionally beyond our purlieus where we are tempted to graze so safely domesticated. We should continue to feel challenged by some of the older ideals of education, which still have the heat and light to inspire us — the cry of Terence: *Homo sum; humani nil a me alienum puto.* The ideal of the Renaissance Man, the *Uomo Universale* of the Italians. Continued enlargement of concept and flexibility of attitude are required of us as educators and teachers, for it is only in such largeness and flexibility that we can hope to enrich our study further — and thus be able to cope with the semantic and aesthetic problems that demand both formulation and solution, and also be able to cope with problems already identified as they change constantly in the world of education, whose inevitable change we ourselves should be helping to predict, control and—perhaps most importantly—effect.

The Development And Use Of Evaluative Phonetics

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Introduction

In this paper the 43 basic English-language sounds Malone, (3) and their symbols will be listed. The Kyte-Neel (2) word list is analyzed to illustrate the distribution of sounds.

In this study, 19 consonant sounds, 5 long vowels, 5 short vowels, and 14 combinations were used. The 501 words in the Kyte-Neel list were studied and tabulated, sound by sound. For example, "went" would be listed under "w" (w)ent, under "e" w(e)nt, under "n" we(n)t, and under "t" wen(t). The same procedure was used for each word. Decimal entries represent variant spellings of the basic sound. The number of separate sounds catalogued was 1,790. This kind of study expanded to many basic word lists will better enable us to evaluate the need to simplify phonetics.

Phonetic analysis is a basic element in both reading and spelling, so reference will be made to both. Variant spellings are at the root of many word recognition or word attack problems in reading. They constitute what Bruner (1) refers to as "disjunctive" concepts, since there are several ways of symbolizing the concept (sound).

Analysis of Variant Phonetic Forms

If the regular form of a sound is contrasted with variant forms the following is seen:

TABLE ONE*

		Regular	Irregular	%
VOWELS	LONG	115	94	45
	SHORT	221	105**	32
CONSONANTS		848	139	14

"Regular" is defined as the letter used for the most common form as seen in the unit entries in Table One. Variants are given as decimal entries. The per cent of total is rounded for convenience.

TABLE TWO***

Basic Sounds From the Kyte-Neel List

A. Consonant Spelling	**Frequency**
1. b (*b*at)	36
2. c (k) (*c*at)	36
2.1 pi*ck*	3
2.2 epo*ch*	1
2.3 con*qu*er	0
2.4 too*k*	18
2.5 wal*k*	2
2.6 ac*c*ount	1
3. d (*d*og)	78
3.1 rubb*ed*	9
3.2 cou*ld*	3
3.3 da*dd*y	1
4. f (*f*un)	37
4.1 *ph*one	1
4.2 enou*gh*	1
4.3 di*ff*er	2
4.4 hal*f*	3
5. g (a*g*o)	30
6. h (*h*ad)	25
6.1 *wh*o	1
7. j (*j*ack)	2
7.1 lar*g*e	2
8. l (*l*et)	71
8.1 ca*ll*	13

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*NOTE: No attempt is made to catalogue the sounds in their initial, medial, or final positions; numbers refer to the number of times the sound appears in the Kyte-Neel list.

**56 of these or 17% involve the Schwa sound. (The Schwa has a short u sound).

***100 is 5.6% of the total.

9. m (*m*et)	56
9.1 su*mm*er	1
9.2 colu*mn*	2
10. n (*n*ot)	111
10.1 di*nn*er	2
10.2 *kn*ew	1
11. p (*p*lay)	33
11.1 ha*pp*y	3
12. r (*r*an)	89
12.1 *wr*ote	5
12.2 so*rr*y	2
13. s (*s*it)	75
13.1 dre*ss*	8
13.2 on*ce*	13
14. t (*t*op)	106
14.1 ask*ed*	1
14.2 ou*ght*	2
14.3 be*tt*er	9
14.4 recei*pt*	1
15. v (*v*ery)	25
15.1 o*f*	1
16. w (*w*as)	27
16.1 *o*ne	2
17. x (bo*x*)	2
18. y (*y*ou)	9
18.1 pleas*u*re	1
19. z (*z*oo)	0
19.1 a*s*	31
19.2 time*s*	1
19.3 *x*ylophone	1

B. Vowel Sounds, Long

20. a (d*a*te)	20
20.1 alw*ay*s	15
20.2 the*y*	1
20.3 m*ai*l	2
20.4 gre*a*t	2
21. e (b*e*)	29
21.1 an*y*	26
21.2 *ea*ch	8
21.3 k*ee*n	14
21.4 mon*ey*	1
21.5 pe*o*ple	1
21.6 rec*ei*pt	4
22. i (l*i*ke)	27
22.1 b*y*	6
22.2 b*uy*	1
22.3 *eye*s	1
23. o (ag*o*)	36
23.1 f*ou*r	4
23.2 sh*ow*	4
23.3 d*oo*r	1
23.4 *o*h	1
23.5 th*ough*	1
24. u (*u*se)	3
24.1 be*au*tiful	1

C. Vowel Sounds, Short

25. a (c*a*t)	47
25.1 *au*nt	1
26. e (p*e*t)	57
26.1 *a*ny	4
26.2 ag*ai*n	3
26.3 fr*ie*nd	2

26.4 g*ue*ss	1
26.5 h*ea*d	2
26.6 th*ei*r	1
27. i (pit)	74
27.1 b*ee*n	1
27.2 g*ea*r	6
27.3 b*u*siness	1
27.4 h*ere*	5
28. o (top)	25
28.1 *a*ll, w*a*lk	18
28.2 bec*au*se	2
28.3 th*ough*t	2
29. u (cut)	18
29.1 *a*go	21
29.2 ev*e*n	11
29.3 c*o*me	21
29.4 serv*i*ce	1
29.5 cert*ai*nly	1
29.6 en*ou*gh	1
(u is the schwa)	

D. Combinations

30. er (h*er*)	41
30.1 answ*er*	1
30.2 *ear*ly	3
30.3 f*ir*st	4
30.4 Sat*ur*day	4
30.5 w*or*k	3
31. oi (*oi*l)	0
31.2 b*oy*	2
32. (l*oo*k)	6
32.2 c*ou*ld	4
32.3 f*u*ll	6

33. oo (r*oo*m)	7
33.1 d*o*	7
33.2 f*ew*	4
33.3 thr*ough*	1
33.4 t*wo*	1
33.5 y*ou*	1
33.6 bl*ue*	1
34. ow (n*ow*)	5
34.1 ab*out*	10
35. ch (*ch*eck)	6
35.1 fut*ure*	3
35.2 quest*ion*	1
36. ng (alo*ng*)	23
37. nk (tha*nk*)	2
38. qu (*qu*ite)	1
39. sh (fi*sh*)	7
40. st (*st*ate)	2
41. th (*th*ank)	13
42. th (o*th*er)	11
43. zh (azure)	1
43.1 plea*sure*	1

E. Silent Letters

44. e (fin*e*)	44
44.1 ar*e*	29
45. i (bus*i*ness)	1
46. t (Chris*t*mas)	1

Implications

Two major implications have been considered over the years. (1) Simplify phonetics, and/or (2) learn the variations. We are at present committed to learning the variations.

A Simplified System

In order to consider the implications of a simplified system, let us define one. The following is a composite of several, with some adaptations.

1. Have a unique symbol or combination for *each* sound.

2. Indicate a long vowel by placing the "e" immediately after that vowel. EXAMPLES: fire = fier, fate = faet, meat = meet, time = tiem, so = soe, duty = dutee. If the aim is to allow a mechanical scanning procedure, the e could be put in the same space areas as an "m". Obviously, variations would be a real problem for the machine.

3. When a pronunciation choice indicates an ambiguity, use the *softer* sound. EXAMPLE: fear = fir not feer. (Note the single i is soft).

4. Use no double letters. (Double letters in our present system have the sometimes value of softening a preceding vowel, as in little. Still, we spell "travel" not travvell).

5. Let o stand for all the sounds of a (except the a in cat) as well as o as in cot. Then we have father and brother dot for dot and ol (all). The broad a and semi-broad a are given up. (Harvard becomes horverd).

6. Keep x as a shorthand for cs, since it isn't used often anyway.

7. Use y only for the "y" sound in you, not for ee as in an(y).

8. Use "z" for the z sound in zoo and zh in place of the z in azure.

9. Use c for the "c" sound in cut, and s for the "s" sound in city = sity, or rather, sitee. The letter "k" is not needed at all.

10. Use go for (g)o and j for (j)et.

11. Continue to use careful pronunciation for wanted sounds. Keep the second "e" in every (not evry). But, do not put an extra "a" in ath(a)letic.

12. Use the combinations as indicated in the basic sound symbols in the list above.

With such a system, 35 variants of 19 consonant sounds, and 39 variants of 12 vowel sounds, with other simplifications will be accomplished.

We would then be reading such sentences as:

Now is the time for all good men, NOTE ("men" is not changed but "women" becomes wimun).

Nou iz thu tiem foer ol good men,

The proponent of this approach tends to favor the idea that variants are of equal or greater frequency than regular forms, often makes the problem seem worse than it is, and tends to claim too much for his simplified system.

Our Present System

Our present system has two major advantages: (1) variety (2) observable homonyms.

We can at present, without context, observe the meaning in meet-meat, to-too-two, reign-rain, pain-pane, and many others. This may be mostly a sentimental loss, but its convenience would be missed.

The value of variety may have been overlooked in the cry for efficiency and simplicity. Have we encouraged a "psychological set" to rich expression by allowing almost any letter combination to be used in words? Can a whole nation be conditioned to look for various solutions to problems because the language itself is rich in combinations of its own?

Some Eskimos have no word for snow, but have labels for its varieties. Our language reflects the kinds of discriminations that are useful to us. The avoidance of rigidity may be the hidden virtue in our present system. Still can't we go so far as to eliminate the double consonants in acomodate, and comunicate?

Note that while 45% of the long vowels listed are irregular, that the variant spellings of ay for (long) a, y for (long) e (as in any), and ee for (long) e make up most of the variance.

Evaluative Work With Individuals

With a knowledge of variant phonetic sub-structure, we are in a position to help any given individual more effectively. The procedure is (1) determine the kind and variety of his errors in phonetic attack, (2) carefully demonstrate how these sounds may be spelled in other ways, restricting the instruction to his personal collection of common errors, and (3) develop a conditioning program of sentences which contain variants of the sound giving him difficulty. Such tailor-made diagnostic aids do require a great deal of time. When this is not possible, group studies and drill on the more common variants is the most practical alternative.

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A Study Of Creativity In Reading

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Within recent years educators have been giving increasing attention to the topic of creativity as a factor contributing to individual differences among students. Many articles and reports in professional journals and other publications concerned with education reveal a growing interest on the part of educators in the subject of creative ability and any relationships it may have to school achievement.

Evidence of this increasing concern about creativity can readily be found in the *Education Index*. For the five-year period of 1951-55 only nine articles were listed under the heading of "Creative Ability" in this publication. For the five-year period of 1958-62 there were ninety-nine articles listed under that heading, a ten-fold increase for the second five-year period.

As an outgrowth of this interest in creativity, several research studies in recent years have undertaken the task of attempting to identify and assess relationships between creativity and intelligence and between creativity and school achievement. One of the more extensive projects in this area was a study made by Getzels and Jackson (2) in a Midwestern private school. On the basis of measures of intelligence and creativity they identified two groups of high school students, designating one as highly intelligent and the other as highly creative. Despite a difference of twenty-three points in intelligence quotient in favor of the highly intelligent students, the highly creative group performed as well on a test of school achievement. Torrance (5) conducted a study along similar lines over a three-year period in the University of Minnesota Laboratory Elementary School. Although there was an average difference of more than twenty-five intelligence quotient points favoring his highly intelligent group, Torrance found no statistically significant differences between the two groups on any of the measures of school achievement used as instruments in the study. Torrance further asserted that essentially the same results were achieved in subsequent studies in a Minnesota public high school, in the University of Minnesota high school, and in a graduate school situation. The results were not confirmed, however, in a parochial elementary school and in a small town elementary school known, according to Torrance, for their emphasis on "traditional virtues in education." Other studies in which creativity appeared to be an important factor in school achievement have been reported by Yamamoto (7), Rivlin (3), and Schmadel (4).

Since previous research had been concerned with relationships between creativity and general level of educational achievement, it seemed desirable to make a study of creativity and reading. Questions such as the following appeared to offer fruitful avenues for exploration: Is there a difference in the literal reading abilities of students who are highly creative and those who are less creative? Do both kinds of students, highly creative and less creative, function equally well in critical reading? Does the creative student appreciate poetry and understand works of literary merit to a greater extent than his less creative classmate?

Another area which appeared to warrant study was the reading achievement of students in the average and lower ranges of intelligence who had been categorized on the basis of creativity. Much of the research previously conducted had concentrated on students whose intelligence scores were quite high, the mean intelligence quotient of all subjects in serveral of the studies being well above 120. These quite obviously were highly select groups since even those students in the less intelligent samples were considerably above average in comparison to the usual school population. Although studies of students highly gifted in intelligence are both necessary and desirable, most educators must also concern themselves with students throughout the entire range of intelligence.

The major purpose of this study was to determine whether creativity is a factor, and if so, to what extent, in the reading achievement of high school students. Three levels of creativity and three levels of intelligence were studied for relationships to general level of reading achievement and to specific kinds of reading. Subjects in this study were 232 students enrolled in eleventh-grade English classes in a large metropolitan high school. A battery of creative thinking tasks and three tests selected as measures of literal, critical, and creative reading were administered. An intelligence quotient, based upon the *Otis Quick-Scoring*

Mental Abilities Test, Gamma Form, was obtained for each student from the school records.

A wide variety of tasks for use in assessing creative thinking had been developed at the University of Minnesota by E. Paul Torrance and his colleagues. In granting permission for use of his tests in this study, Torrance (6) nominated *Test of Imagination, Form G-R*, as being especially suitable for high school students. Protocols may be scored for fluency, flexibility, originality, elaboration, adequacy, and penetration. Interscorer reliabilities averaging about .90 are reported by Torrance for most of the sub-tests comprising this battery.

The *Nelson-Denny Reading Test, Form A*, was used as a measure of the literal reading abilities of the subjects. This form is a 1960 revision of an evaluation instrument used extensively for more than twenty years to measure assimilative reading achievement of high school and college students.

The *Watson-Glaser Critical Thinking Appraisal, Form Am*, was used as a test of the subjects' skills in critical reading. This instrument was designed to measure skill in reading critically to evaluate statements or arguments, to weigh evidence, to detect bias, and to arrive at sound conclusions.

The *Cooperative Literary Comprehension and Appreciation Test, Form T*, was used as a measure of the creative reading skills of the students. This test was designed to assess the student's ability to understand implied meanings which are not directly stated by the author and to understand the author's intent and purpose.

In the process of planning this investigation, the following hypotheses were formulated:

1. Creativity will account for an additional component of variation in reading performance which is distinct from the variation which can be accounted for by intelligence.

2. Intelligence will be more closely related to critical reading than to creative reading.

3. Creativity will be more closely related to creative reading than to critical reading.

4. Creativity will be more closely related to all aspects of reading at higher levels of intelligence than at average and lower levels.

In the analysis of the data all scores from the reading tests were converted to percentile ranks by reference to the appropriate tables of normative data provided by the publishers. These percentile ranks were then converted to McCall T Scores by using *Table IX, Probits*, listed by Fisher and Yates (1) for transformation of the sigmoid dosage mortality curve to a straight line. Intelligence quotients were converted into percentile ranks and then into T Scores by using the same table. Area transformation of the creativity scores into T Scores was performed by utilizing a program developed for the International Business Machines 1620 Computer.

Several considerations entered into the selection of a method for analyzing the data. One of the primary considerations was that the analysis should be made in such a manner that not only the separate effects of intelligence and of creativity could be assessed, but also that any interaction between the two factors could be identified. Another consideration was that differential performance on the three reading measures would be analyzed separately. Still a third consideration was that three separate levels of intelligence and of creativity must be studied simultaneously.

A completely randomized 3 x 3 factorial design was employed. Three levels of intelligence and three levels of creativity were used, thus creating nine classification categories with ten students (replicates) in such category. Each level of intelligence and each level of creativity is therefore composed of thirty subjects for a total of ninety subjects in each analysis.

Creativity

Examination of the data revealed that groups of students could be selected with T Score means of 60, 50, and 40 on both intelligence and creativity permitting a difference of one standard deviation unit between means of sample groups.

When the scores of the three reading tests were subjected to analysis of variance there was some indications that creativity might be exerting an influence upon the variation in reading performance but the effects were not statistically significant even at the five per cent level of probability. There was also some suggestion of interaction in one analysis but the effects were not significant. The principal source of variation in all cases was intelligence. The F ratios obtained in all analyses indicated that the effects of intelligence were statistically significant at the one per cent level of probability.

The results of the analyses of data led to the rejection of all four hypotheses which had been formulated for testing. No support was found in this study for the hypothesis that creativity is a factor in reading performance of high school students.

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How Popular Is Reading Instruction?

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Is the Ability to Read A Necessity?

In asking himself the question who is to lead mankind, Voltaire remarked astutely, "Those who know how to read and write." Thomas Jefferson once wrote in one of his letters that "People who can read can be free because reading banishes ignorance and superstition." Today, world leaders place considerable importance on the ability to read because they fully recognize that the nations who really lead mankind are those where the illiteracy rate is kept at a minimum. Thus, it is recognized now, as it has been throughout the centuries, that the ability to read is one of supreme importance.

Professional people are acutely aware of the importance of developing reading skills. Professional interest is not restricted to the professional educator alone; it is currently reflected in the linguist, the sociologist, and the psychologist, as well. This interest is exhibited by the amount of time devoted to reading instruction in our schools, studies related to the teaching of pre-school children, and the upsurge of scientific studies in the field of reading instruction. The increase in the number of scientific studies conducted in the twentieth century is phenomenal! The *Encyclopedia of Educational Research* (5) cites a mere 14 scientific studies in the area of reading prior to the twentieth century; however, in the twentieth century there have been 20 studies reported in the first decade, 200 in the second decade, 764 in the third decade, 1,071 in the fourth decade, 915 in the fifth decade (a slight decrease because of the war years), and more than 700 for the six-year period from 1951-1957. Professional interest is further evidenced by a review of the *Education Index* (4) for the three-month period of January through March 1963 in which 174 professional articles were written and published which directly or indirectly are concerned with the subject of reading.

Parents, too, are no less aware of the value and importance of developing reading skills. This is observed in the universal concern of parents with their children's reading abilities and reading problems. Parental concern is justified in that they realize a relationship exists between success in developing reading skills and success in the other skill and content subjects. Also, they tend to relate success or failure in reading to the vocation which the child may choose, knowing that today the person without an adequate education has a difficult time being successful. They recognize in the future that it will be more difficult, if not impossible. Many parents are cognizant of the detrimental effect which failure in reading has on the interpersonal relationships of the child and the resultant effect on the social prestige of the entire family. These effects cannot be denied.

The importance attributed to the ability to read is undoubtedly justified because reading is the most universal and mose useful skill which the individual acquires. At the same time, reading is probably the most troublesome subject in the curriculum. Problems in reading do not restrict themselves to the grades in which there is reading instruction; they are encountered from the first grade throughout life.

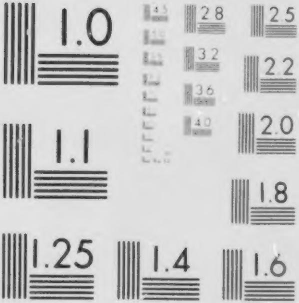
We need to focus our attention on the students, for it is with students that we find the nucleus of these problems. What are students' opinions concerning reading activities? Do they like or dislike reading activities? If we were to make individual consultations in an effort to secure the answers, we would probably remain confused and dismayed because for some children reading is unpopular, for others reading is tolerated, and for a small minority, reading is the most exciting experience which can be had. Karlin (6) cites the per capita circulation among juvenile books as having increased from 3.4 books in 1950 to 4.2 books in 1956. Some optimism might develop as a result of this information until we encounter Shea's (7, p. 86) comment ". . . that 70 per cent of the books read are read by 20 per cent of the population." The tremendous increase in book publications since 1935 may serve as another indication of students' interest in reading; however, it can only be presumed that *available* books are being read. Substantial data are available revealing the topics preferred by children of different ages and grade levels, but this information is only a guide to *what children will read* and is not a determination of *what amount of reading* they will accomplish.

Is Instruction in Reading Popular?

After having considered the importance of reading and the interest shown in it by various groups, let us now turn to the question, "How Popular is Reading Instruction?" As we all know, educators are not extremely concerned *per se* about how popular or unpopular they or their field of instruction may be; however, they are vitally interested in, and constantly in search of, information which could make instruction in reading more effective. There are two major inferences which may be concluded from the answer to this question; first, if children have been properly motivated for instruction in reading, they will probably consider it to be popular in relation to other skill and content subjects; second, if our methodologies in reading instruction have been effective, children will consider instruction in reading a pleasant, satisfying, and most desirable experience and will, therefore, relegate it to a place of popularity among the other skill and content subjects.

In order to find a solution to our question, "How Popular is Reading Instruction?", let us review the research literature which has been conducted on the subjects preferred by school-age children.

Chase (1) reported a study on the subject preferences of fifth-grade children which was begun in December, 1947. This study was conducted in sixty-five New England towns and cities and included 13,483 fifth-grade children. Later, a follow-up study was conducted in a southwestern city in which the preferences of 2,350 fifth-grade children were determined and included in the reported study. Subjects included in the study were arithmetic, art, health education, language, music, penmanship, reading, science, social studies, and spelling. Data were secured by a check list which had the subjects listed and the students were to indicate the first, second, and third preferences. Rank order of subject preferences was based upon an enumeration of first-choices and the rank order of subjects was determined for boys, girls, and boys and girls grouped together. The anaysis of data revealed that reading was the most preferred subject for all three groups of fifth-grade children. Approximately 23 per cent of the boys and 23 per cent of the girls, as well, indicated reading was their first choice. When data for boys and girls were combined, 23 per cent indicated that reading was their first choice. Another part of this study was designed to determine the rank order of favorite subjects


1.0
4.5
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

of teachers. The results indicated that reading ranked fourth for teachers with only 12 per cent considering reading as the favorite subject to teach.

In January, 1957, Chase and Wilson (2) reported a second survey on the subject preferences of fifth-grade children. This study, identical in design, was a follow-up of the first one made in 1947. The follow-up study included 19,135 fifth-grade children from seventy-eight New England towns and cities. The results of this study indicated that boys ranked reading second with 17 per cent of them indicating reading as their first choice. The girls considered reading as the favorite subject with 22 per cent of them indicating reading as their first choice. With reference to the girls, there is a consistency with the first study made by Chase. When the data for boys and girls were combined, reading ranked second with 19 per cent of them indicating it as their favorite subject. Teachers ranked reading as third; 12 per cent considered it the preferred teaching subject.

Cutts and Mosely (3) made a study of six hundred seventy-three boys and girls with IQ's of 120 and above. The pupils ranged from age six to age seventeen in Grade 2-12 in ten Connecticut schools. The results from two items in the questionnaire bear some attention and comment: "What school subject do you like best?" and "What school subject do you like least?" The information collected indicated that reading was *second* among the subjects *liked best* and *third* among the subjects *liked least*. These data indicate that although reading is quite popular with many students there is a significant number of students for whom reading instruction is unpopular.

Although the studies which have been mentioned indicate that reading instruction, in general, holds a place of importance among students, there appears to be a slight tendency for a decrease in popularity. The decrease in popularity of reading instruction is further illustrated by a more recent and more comprehensive study which was conducted by the writer.

The subject preferences of 43,979 fifth-grade children from 276 cities in the United States were determined by the questionnaire method. The students consisted of 22,548 boys and 21,431 girls representing all 50 states. There was an effort made also to use children from different parts of every state.

The questionnaire used in gathering the data was designed so that the children filled in the name of the city and state, identified their sex classification, and wrote in the names of skill and content subjects in the order of their preference. Skill and content subjects had previously been written on the chalkboard as follows: arithmetic, art, health and physical education, language (English), music, reading, science, social studies, and spelling.

The rank order of the skill and content subjects was determined by a process of weighting the various choices. This was accomplished by assigning a weight which was comparable to the choice (i.e., a first choice received a weight of 1, a second choice a weight of 2, third choice a weight of 3, and the weighting process continued through the ninth choice in the same manner). The aggregate weighted score was then determined for each of the skill and content subjects. The skill or content subject with the lowest aggregate weighted score was highest on the preferential list of subjects, the one with the next to the lowest score was second on the preferential list, and the procedure continued through the other skill and content subjects to establish their rank order positions. This procedure was utilized in determining the rank order of subject preferences for boys, girls, and boys and girls grouped together. A further analysis was made for geographical regions and for each state (See Table 1).

When all of the students in the United States were considered, boys ranked reading instruction as fifth; girls ranked reading instruction fifth, and when sampled collectively, they ranked reading instruction as fourth. When the data were analyzed by geographical regions, a few variations were noted. In the Middle

TABLE 1

Distribution of Students and Rank of Reading

Geographical Regions and States Included	Number of Subjects			Rank of Reading		
	Boys	Girls	Total	Boys	Girls	Total
United States	**22548**	**21431**	**43979**	**5**	**5**	**4**
Middle Atlantic States	3573	3354	6927	5	3	4
Delaware	584	531	1115	6	2	3
Maryland	1812	1722	3534	3	3	2
New Jersey	386	322	708	5	2	4

New York	306	276	582	5	1	2
Pennsylvania	485	503	988	6	5	5
Midwestern States	5095	4834	9929	5	5	5
Illinois	598	555	1153	5	5	5
Indiana	476	413	889	5	5	5
Iowa	313	306	619	6	5	6
Kansas	348	320	668	5	5	5
Michigan	528	583	1111	5	4	5
Minnesota	454	419	873	4	4	4
Missouri	246	248	494	3	4	3
Nebraska	343	341	684	6	5	6
North Dakota	341	306	647	5	4	4
Ohio	426	378	804	5	5	5
Oklahoma	562	523	1085	4	5	5
South Dakota	297	301	598	4	4	4
Wisconsin	163	141	304	4	4	5
New England States	2317	2168	4485	4	2	2
Connecticut	713	681	1394	5	1	3
Maine	362	353	715	4	2	3
Massachusetts	328	271	599	4	2	2
New Hampshire	227	230	457	2	2	2
Rhode Island	479	422	901	6	2	2
Vermont	208	211	419	3	4	4
Pacific Coast States	1393	1353	2746	4	6	5
California	420	426	846	4	5	6
Oregon	489	442	931	4	5	5
Washington	484	485	969	4	6	6
Southern States	6423	6095	12518	4	5	4
Alabama	290	254	544	4	2	3
Arkansas	286	283	569	5	4	4
Florida	625	597	1222	4	2	2
Georgia	311	294	605	4	4	4
Kentucky	420	392	812	4	5	5
Louisiana	589	511	1100	7	3	3
Mississippi	257	220	477	4	4	4
North Carolina	513	478	991	5	5	5
South Carolina	866	877	1743	4	3	3
Tennessee	549	524	1073	4	5	5
Texas	548	526	1074	6	6	6
Virginia	944	901	1845	4	5	4
West Virginia	225	238	463	4	5	4

Western States	3192	3080	6272	5	5	5
Arizona	564	540	1104	5	5	5
Colorado	326	343	669	6	6	6
Idaho	400	337	737	4	5	6
Montana	424	412	836	6	5	5
Nevada	169	205	374	5	6	5
New Mexico	427	408	835	5	4	4
Utah	529	497	1026	3	2	2
Wyoming	353	338	691	5	5	6
Non-Contiguous States	555	547	1102	4	4	4
Alaska	109	121	230	5	3	4
Hawaii	446	426	872	4	4	4

Atlantic States, boys ranked reading instruction fifth; girls ranked reading instruction third; and then grouped together, they ranked reading instruction fourth. In the Midwestern States, boys and girls, separately and collectively, ranked reading instruction fifth. In the New England States, boys ranked reading instruction fourth; girls ranked reading instruction second; and grouped together, they ranked reading instruction second. In the Pacific Coast States, boys ranked reading instruction fourth; girls ranked reading instruction sixth; and collectively, they ranked reading instruction fifth. In the Southern States, boys ranked reading instruction fourth; girls ranked reading instruction fifth; and grouped together, they ranked reading instruction fourth. In the Western States, boys and girls, separately and collectively, ranked reading instruction fifth. In the two non-contiguous states (Alaska and Hawaii), boys and girls, separately and collectively, ranked reading instruction fourth.

A comparison of the preferential order of subjects established by this study with the results of related studies might elicit criticism since dissimilar techniques were used in ranking the subjects; therefore, the data were also treated in a similar manner. The results of this analysis place reading instruction in a less favorable position among the skill and content subjects. Boys ranked reading instruction seventh in the Middle Atlantic, Midwestern, New England, and Southern States. Reading instruction was also ranked seventh by the boys for the entire United States. They ranked reading instruction sixth in the Pacific Coast States and fifth in the Western and Non-contiguous States. When based on first choices, rank of reading instruction was lower for every grouping except the Western States where it received the same rank. For the girls, reading instruction received the same ranking for all groups except the Middle Atlantic, New England, and Pacific Coast States where reading instruction ranked fourth, third, and fifth, respectively. Using first choices, reading instruction ranked lower in the Middle Atlantic and New England States, but one position higher in the Pacific Coast States. Grouped together, the boys and girls ranked reading instruction sixth in the Midwestern States; fifth in the Middle Atlantic, New England, and Non-contiguous States. Collectively, they ranked reading instruction fifth for the entire United States. In each of these groupings, reading instruction ranked lower on the basis of first choices; yet, the ranking was the same in the Pacific Coast, Southern, and Western States.

There were 1,602 boys, or 7.1 per cent; 2,386 girls, or 11.1 per cent, and when grouped together, 3,988, or 9.0 per cent who chose reading as the preferred subject. When ninth choices were considered 1,311 boys, or 5.8 per cent, 962 girls, or 4.5 per cent; and grouped together, 2,273, or 5.2 per cent chose reading as the least desirable subject.

Conclusions

In our society the value placed upon the ability to read is unquestionable as revealed by the direct influence which the mastery of this particular skill has on an individual's success in life. Reading instruction was quite popular a few years ago, but there has been a gradual decline in popularity to such an extent that professional people who have a special interest in reading should be alarmed. Rank of reading instruction is higher in the New England States than in any other geographical region represented by the studies used in this paper. Also, girls tend to rank reading instruction in a more favorable position than boys.

Even though the ability to read is of inestimable value to the individual, the popularity of reading instruction is questionable.

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Influence Of Direction Upon The Reading Flexibility Of Advanced College Readers

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Flexible reading behavior, in its broadest sense, has been a key objective of reading instruction for some decades. Adjusting one's reading attack to material and purpose in order to maximize reading performance is considered to be an essential characteristic of the able reader and, supposedly, occupies a substantial place in the various reading curricula. (11) A number of recent publications have called attention to the considerable inflexibility of American readers at all levels of development, particularly in the area of rate performance. (4) Inflexibility in reading-study attack has been noted even among better college students. (6)

Some factors which may contribute to rigidity of reading performance include the conditioning influence of instructional emphasis upon reading mechanics (5), inadequate knowledge of higher level study skills (8), the absence of adequate measures of flexibility (9), the lack of high level intellectual power (2), and the tendency of the reader to avoid conative and affective conflict. (12)

Flexibility is a coordinated reaction to both purpose and material. The difficulty experienced by many students in transferring flexibility skills learned in the college reading laboratory to the broad college learning situation may indicate that problems of flexibility, in part, lie outside the realms of ordinary training and volition. Smith (10) for example, found that while good freshman readers made some adjustment of ocular = motor reading behavior when reading a freshman history text for different purposes, their mean rate change varied less than fifty words-per-minute. More importantly, the comprehension performance of these freshmen was not successfully adjusted to the purpose for which they read.

The Nature of the Investigation

Most of the available evidence concerning flexibility, or the lack of it, has been obtained on samples of normal populations at the college freshman level or below. It would be useful to determine whether the prevailing pattern of reading rigidity extends to academically gifted individuals at the professional and preprofessional levels. Preferably, this performance sample would be obtained on reading material which provides a challenge comparable to that experienced by lesser readers when they read a textbook. It would be of some functional value if such material were of the nature we should expect in non-technical but broadly professional reading. Since reading flexibility traditionally has been studied under single reading conditions, it would be useful to investigate the behavior of these advanced readers under rereading conditions.

Specifically, the purpose of the first phase of this study was to observe the influence of the three prereading directions upon the rate and comprehension performance of a sample of able readers of advanced academic status. The subjects consisted of fifty-four students majoring in English education at a state university. To fulfill the second phase of the study, thirty-seven of these subjects were randomly selected to serve as a subsample for investigating the influence of the rereading condition upon accuracy of comprehension. Representative results of the subjects obtained on the *Nelson-Denny Reading Test* (Revised,) are presented in Table I, and confirm the advanced reading status of the sample.

TABLE I

Nelson-Denny Reading Test Results for 54 Majors in English Education (Revised Form)*

	Vocabulary		Comprehension		Total		Rate	
	Raw	PR	Raw	PR	Raw	PR	WPM	PR
Low	36	17	38	21	82	26	165	05
High	87	99	72	93	157	99	639	99
Median	59	74	59	74	120	80	356	76
Mean	58	72	59	74	119	79	376	83
S.D.	11.3		7.8		15.7		29.1	

*Form A, Grade 16 Norms. Houghton Mifflin, 1960.

The experimental test consisted of three reading selections of approximately 1200 words length. The selections met the needed criteria: they dealt with relatively complex but nontechnical concepts; were written for the well educated adult; dealt with controversial matters, (work ethics, progress of communism, and racial discrimination); and presented organizational patterns and author attitude in a definite but subtle manner. (13) The check of comprehension recall which followed each selection consisted of twelve multiple choice items equally divided between the identification of significant ideas, interpretation of specific details, and analysis of author's motives.

The four conditions for reading consisted of three prereading directions and one rereading direction. The three prereading directions were: (1) "Read this selection as a course assignment over which you are to be tested tomorrow," (2) "Read this selection to identify its main ideas," and (3) "Read this selection to critically analyze the motives and attitudes of the author." The fourth and rereading condition consisted of an opportunity to "reread the selections to correct errors made on the first reading". For this condition the subjects knew only that they had missed the item and must select the correct answer from the original multiple choice responses. A five day lapse separated the first reading from the post-reading.

The subjects read all three selections, each selection under a different prereading direction. Reading rate was determined over each selection by the amount-limit procedure. The comprehension check was untimed. Since it was administratively impossible to assign all subjects to all treatments combinations, each subject was randomly assigned to effect a counterbalanced order of reading selection, of reading direction, and of selection-direction combination. The resulting mixed design for the three prereading conditions fits the pattern described by Lindquist (3) as a Type II design. An analysis of variance was employed to assess the main effect of the reading purposes as well as to test the between-subject and within-subject interaction on reading purpose and the specific selection.

Since the subjects for the fourth condition comprised a random selection of the original sample, and the data consisted of before and after comparison of comprehension measures on the same individuals, a simple t test of differences between corelated samples was used to determine significance of improvement.

Findings

Descriptive results of the investigation are presented in Tables II and III. In Table II it will be noted that differences in mean performance on rate, total comprehension, and the three specific areas of comprehension when the subjects read to satisfy the three prereading directions were very slight. It is not surprising that analysis of variance should find that these differences were insignificant. The substantially slower rate performance under all three prereading conditions could be considered as evidence of reading flexibility if the comprehension performance were more substantial. However, the rather minimal performance in accuracy of comprehension suggests that this decreased rate may reflect reading "frustration" rather than conscious and effective flexibility. Although the differences are minimal, the results imply that these advanced readers also have greater difficulty with the analysis of author motive than with the interpretation of stated particulars.

Some within-subject interaction was observed for the several reading selections suggesting that individual interest in the reading topic may tend to offset the direction-set of the reader. No significant group differences in performance on the various selections were observed, however. Personal differences in topic interest and topic background were the most frequent issues mentioned by the subjects in a post-experiment discussion. This source of reader variation needs more direct and specific investigation

TABLE II

Mean Performance on the Experimental Reading Test When Reading Under Three Directed Purposes (N-54)*

	Directed Purpose for Reading			
	Prepare for Exam	Identify Key Ideas	Analyze Author Motives	Composite Mean
Rate (wpm)	176	182	184	181
Total Comprehension	51%	53%	52%	52%
Main Ideas	49%	54%	54%	52%
Stated Details	59%	60%	57%	58%
Critical Analysis	46%	45%	42%	44%

*No significant differences were found for these measures under these reading conditions.

Table III presents a comparison of mean comprehension performance for the three prereading conditions with the comprehension performance for the rereading condition of thirty-seven randomly selected subjects of the original sample. The accuracy obtained under the rereading condition is more consistent with our expectations for these advanced readers. The rather sizeable and significant improvement of comprehension when rereading with a minimal corrective feedback is not surprising in view of the previous investigations of the feedback phenomena in skills performance (1), nor is it surprising in view of the increasing body of evidence concerning the effectiveness of programmed learning. (7) However, the interest and vigor with which these rather sophisticated students attacked this corrective rereading task was quite evident. The post-experiment discussion with the subjects revealed a substantial preference for the rereading condition to any of the three prereading conditions. These advanced students further indicated that opportunity for improving upon performance under conditions of corrective feedback was quite unusual in their reading and general academic experience.

TABLE III

Comparative Mean Comprehension Results for Composite Directed Prereading and Corrected Rereading Conditions (N-37)

Measure	Composite Prereading	Corrected Rereading	Difference	t ratio
Total Comprehension	52%	79%	27%	12.37*
Main Ideas	52%	79%	27%	11.67*
Stated Details	57%	86%	21%	10.66*
Critical Analysis	46%	75%	29%	11.47*

*t.001=3.55 df=37

The most positive implication of this study centers in the increased interest and success of the subjects when rereading under conditions of corrective feedback. The results suggest that teachers of reading need not await the development of elaborate teaching devices before employing this basic principle of programmed learning. These results also suggest that the tendency to restrict the concept of reading flexibility to single reading circumstances is both theoretically and instructionally unsound. Moreover, it is feasible that greater use of corrective feedback in reading instruction may contribute to the development of reading flexibility.

The lack of flexibility in both reading rate and comprehension revealed by these advanced readers may imply that the prereading directions could not produce effective reading adjustment rather than reflecting true rigidity in reading performance. However, the prereading directions used were chosen on the basis of this criterion —they are frequent directions encountered by the student in his instructional reading experiences.

The low level of comprehension accuracy obtained on first reading of the selections is indeed sobering. If these rather select college readers have such difficulty in understanding this material, for what minute element of our citizenry do Schlesinger, Lipman, Childs, and their colleagues write?

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Diagnosis Of Depth Attitudes Toward Reading By Use Of A Sentence—Completion Test

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While testing students at Southern Methodist University, I routinely administered the *Davis Reading Test*. When subsequently counseling with these students, I found that reading was not only a critical factor in the scholastic adjustment of the student but that it was also an excellent index of the total personality. In order to pursue this notion further, I constructed the sentence completion test that is herein to be discussed, and is included at the end of this paper.

After the sentence completion test had proved helpful in interviews with students, I introduced it to our Reading Clinic. We had the students complete the test after they had been in the reading improvement program for only a few weeks. The responses of the students were diagnosed. Finally, we had them meet in small groups for the purpose of discussing the attitudes revealed by their responses to the test. Each diagnosis was given a number so that anonymity was preserved. However, the student was informed that he could identify himself if he chose to do so. The discussions were transcribed.

After an analysis of the results obtained in the Counseling Center and the Reading Clinic had been made, diagnostic categories were developed. These results have been presented as lectures for discussion in two reading institutes and have been enthusiastically received. The ideas and methods developed out of this study appear to be relevant to the problems faced by reading teachers.

The purpose of this paper is, therefore, to share with you the results of this study in the form of the diagnostic categories which have been developed. Before we get into the discussion of the diagnostic categories, let me indicate briefly the status of this study as a scientific endeavor. A study such as this is properly considered as a starting point in the method of science. Personally, I feel that such rudimentary explorations are extremely important in science. However, they move on to more thorough and public investigation before they become available for general use.

There are seven diagnostic categories. The last category has four parts. Items in the test that are particularly relevant to the category in question are listed with that category.

Category I. *Insight into the reading process.* Items 4, 6, 9, 11, 15, 16, 17, 18, 26, sometimes reveal the presence or absence and the nature of this insight. The student may reveal information about his reading techniques or habits. If you know the nature of the student's insight into his reading processes, you know how to talk with him, how to get him involved in the challenge of changing his reading habits. He may have a defensive preoccupation with his reading techniques. He may have misinformation concerning how he should read. He may show a lack of insight that is indicative of low intelligence or mental blocking of insight into reading techniques. This category seldom yields more than a superficial insight into the student's attitudes.

Category II. *Perceptual control.* Perceptual control or the tendency to maintain an appropriate mental set rather than be distracted by one's own extraneous needs or thoughts is an important part of reading. If a student answered any of the items, but particularly items 3, 5, 19, 20, 21, 22, 23, with responses that are not relevant to reading, he may be weak in perceptual control. The extent to which a student is able to acquire an appropriate mental set and persist in it until the task is finished would seem to be of crucial importance for effective reading. However, irrelevant responses may also be interpreted under Category V.

Category III. *School phobia.* Reading symptoms resulting from school phobia show up most frequently in items 2, 4, 7, 10, 25. School phobia is suggested by responses that indicate frustration, defeatism, distaste, or, in contrast, an overly positive attitude toward reading, teachers, school, learning, etc. Such negative responses may simply indicate that the student lacks the mental ability required for his reading tasks. They may indicate that the student feels rejected as a student; has standards that are too high, or is overly self critical. The overly positive attitude responses may indicate that the student is overly eager to please the teacher. This may be due to his fear of disapproval or rejection or to an excessive need for dependence. The teacher can help such students to overcome school phobia and develop the sense of comfort and belonging in the school situation that is necessary for enthusiastic attention to the task of learning to read. She can do this by establishing rapport with them and allowing them to talk about their fears and hostilities in a casual, non-clinical way. She can let them know that their school work or their adequacy as a reader is not the basis she uses for accepting or rejecting them.

Category IV. *Denying or ambivalent attitudes toward reading.* Denying or ambivalent attitudes usually go hand in hand with school phobia. Denial is usually indicated when other tests indicate that there are no mental or perceptual deficiencies. If the student can read well enough to take the sentence completion test, his responses will, more than likely, express a confirmed feeling of incapacity. Ambivalent attitudes are represented by contradictory statements. These contradictory statements are found in almost every case where there are reading difficulties. The student will indicate by one response that he likes to read and by another response that he dislikes to read. Such students seem to want to please and rebel at the same time. In some cases the student may indicate a sense of inadequacy in one response and a strong sense of competition in another. The student is usually totally unaware of this ambivalence. Any combination of items may reveal ambivalence.

Category V. *Situational antagonism.* A student may be very antagonistic toward the reading course. Items 7, 8, 10, 19, 20, 22, 24, 25, 26, will frequently indicate this attitude. Such an attitude may be indicated by any item by remarks that are childish, by puns, by open expressions of dislike, etc. It is important to know at the beginning of a course who these students are. Such antagonism could be a displacement of hostility toward some other authority on to the reading teacher or reading course as symbols of his failure and rejection. These students may feel dominated or threatened or may be resentful at having been pushed too hard. If the teacher knows who these students are at the beginning of a course, she can make a special effort to be accepting and understanding, to avoid pushing too hard at first, to be encouraging, and, when it does not interfere with the rest of the class, to allow symbolic expression of these feelings.

Category VI. *Psychosomatic defenses.* Many students who feel that they ought to want to read, who have ambivalent attitudes, unconsciously rebel against reading by developing psychosomatic defenses. These psychosomatic defenses show up in the test as responses that indicate fatigue, sleepiness, burning of the eyes, excessive tenseness or restlessness, etc. Items 2, 6, 11, 13, 21, frequently reveal such psychosomatic defenses. The teacher should recommend that the student have a medical examination. If nothing organic shows up in the medical examination, then the teacher can treat the student, not with disapproval for malingering, but with hope that when the student improves his reading skills and experiences some success in reading, he will no longer need the psychosomatic defense. Telling the student that it is all in his mind obviously never works, at least, not to my knowledge.

Category VII. *Four common psychological uses for reading.* a. Escape: Many people used feigned reading as an escape from other less attractive responsibilities or chores of life. They do not really want to read and never really become engaged in reading. Their disengagement becomes a habit or a sort of hypnotic effect. Reading for reading's sake must become very rewarding before they can break this habit. Items 1, 2, 12, 14, 15, 21, sometimes indicate this type of escape or disengagement.

b. Wish fulfillment: The cause of reading for wish fulfillment is frustrated desires. The student wants to do something that he can not do or that is forbidden. He gets vicarious satisfaction from reading about it. Items 11, 23, 24, 26, sometimes indicate this motive for reading.

c. Stimulus to thought: Some students are active thinkers. They are not interested in reading for reading's sake. They pick up a relevant book, not to find out what the author says, but to use it as a stimulus for their own thoughts. They are not day dreaming but they are not reading either. Items 11, 12, 24, 26, sometimes indicate this type of approach to reading.

d. Intellectual competition: Many students spend much of their reading time studying in order to make better grades. They read with the intent to get the necessary information for making a good grade on a quiz. Items 17, 24, 26, sometimes indicate this approach to reading.

None of these psychological uses for reading can be considered bad. Those who have learned to appreciate reading would

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probably want to say that the ideal is to be capable of flexibility in both style of reading and psychological use of reading.

A sample of this sentence completion test with the responses of two college students (labeled a. and b.) is included at the end of this paper. A diagnosis of the responses of students a. and b. is presented below so that the reader may become acquainted with the diagnostic procedure. The response of student a. to the diagnosis of his sentence completion test are presented in order to illustrate the possible effects of this procedure.

Student a. seems to have considerable insight into his own reading processes and is probably ready for more intense instruction in this area (Category I). He shows a capacity for maintaining an appropriate mental set throughout the task. However, items 11, 17, 18, and 21 indicate that he has a problem with this when studying (Category II). He shows considerable ambivalence. This is evident when one contrasts items 1, 4, 14, 22, with items 3, 7, 8, 9, 12, 19, 20, 21. This seems to say that he sometimes likes to read and wants to learn to read faster, but that reading has come to mean all business for him. On the one hand he wants it to be all business, yet on the other hand he finds it somewhat irritating to have to bother with this chore (Category IV). Finally, items 1, 2, 3, 20, 22, 24, 25, indicate that he reads primarily for intellectual competition (Category VIId).

He has a very practical orientation. He wants to get his homework done and get away from it as quickly as possible. He wants to make good grades, but what he really enjoys are things other than reading. He probably tries to scan read most of the time, but finds it impossible with technical material. Pleasure reading is probably distasteful.

Student a: "Uh. That was mine and when I started this course I was really hurting for words per minute. I have picked up to about four hundred words per minute now and you said scan reading and that is supposed to be the fastest and most of my reading was collective reading because I'm an accounting major and all my courses are detailed courses and that's awful slow going." Counselor: "So slow. How does that affect you?" Student a: "Well, I mean, in order to get it down you have to take it slow, you can't read over it." Counselor: "Do you usually read for practical reasons, for facts?" Student a: "Yes, things which I feel will benefit me and I would like to get it done as quickly as possible; there are a lot of things that I would rather do. And read what I feel will benefit me as far as actually helping me and as far as getting something out of it. I very seldom read for pleasure, I mean there are so many other things that I would rather do." Later on in the course of the interview, Student a. indicated that his parents were the sort that wanted everything to have a purpose; there was to be no monkey business; when you do something do it right now, do it right, think fast and get it done. He began to talk about other kinds of reading and to try to establish some identification with them.

Student b. seems to have some insight into the dynamics of his attitudes toward reading (Category I). Lack of perceptual control is indicated by items 1, 3, 5, 6, 17, 18, 23, 25. It is obviously difficult for him to keep his mind on his subject (Category II). School phobia is not clearly indicated (Category III). Ambivalence is clearly indicated by the contrast between items 1, 2, 4, 6, 7, 8, 14, 15, 17; 18, 19, 21, and items 10, 11, 12, 16, 20, 22. The first set of items shows a lack of motivation for and interest in reading. He seems to always approach reading halfheartedly and passively, as if what he is reading should provide the motivation force while he is the passive receptacle. On the other hand there is some feeling that reading is both valuable and enjoyable (Category IV). Category V seems to be hinted at in Category IV. That is, if excessive demands are made upon him in the Reading Clinic, he may react with the attitude, "Why can't I read what I like?" The psychosomatic defense of sleepiness is consistent with his general passive attitude and is indicated by items 2 and 13 (Category VI). Concerning Category VII, he seems to be similar to type (a) when considering items 1, 2, 6, 13, 14, 15, 17, 18, and similar to type (b) when considering items 11, 12. That is to say, he seems disengaged from the reading process and yet is occasionally able to use reading for vicarious satisfactions.

In conclusion, let me say that the main intent of diagnoses such as these is to give the reading teacher a feeling for the subjective, the attitudinal aspect of the student as early in the course as possible. This should make it possible for her to anticipate many discipline and behavioral difficulties before they arise. It should also make it possible for her to establish rapport with the student, as well as to ascertain his motivational difficulties much earlier in the course.

THE READING DEPTH ATTITUDE SENTENCE COMPLETION TEST*

By Edwin Lanier Young

(Respond with the first thing that comes to your mind.)

1. When I read:
    a. I want to read as fast as I can.
    b. I think about other things.

2. Reading makes me:
    a. understand my material.
    b. sleepy.

3. I seldom:
    a. read unless it is part of my study.
    b. want.

4. Speed reading:
    a. is helpful.
    b. has helped me overcome laziness.

5. I always:
    a. try to speed read where possible.
    b. try.

6. When reading my eyes:
    a. move according to the material.
    b. wander.

7. Required reading:
    a. sometimes doesn't interest me.
    b. isn't always interesting.

8. If I have to read:
    a. I don't care to.
    b. why can't I read what I like.

9. I read by:
    a. force.
    b. light and a lot of it.

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* © 1964, Edwin L. Young.

10. Heavy reading:
    a. is slow.
    b. isn't bad after a while.

11. When I read my mind:
    a. sometimes wanders.
    b. is sometimes very receptive.

12. Pleasure reading:
    a. is seldom done.
    b. is the most fun.

13. When I read my body:
    a. is still.
    b. relaxes.

14. Light reading:
    a. is pleasurable and fast.
    b. doesn't always interest me.

15. The words seem to:
    a. flow along.
    b. just be there without meaning.

16. Grasping the meaning:
    a. is not hard.
    b. is the surest mode of understanding and knowing.

17. Remembering what I've read:
    a. is sometimes a problem for details.
    b. isn't always easy.

18. Concentration:
    a. is sometimes difficult.
    b. comes in spurts.

19. I can't seem to:
    a. settle down and study as much as necessary.
    b. get busy with some subjects.

20. I've never wanted to:
    a. read unless it is pointed for some goal.
    b. be as learned as others—until now.

21. Distractions:
    a. affect me.
    b. [illegible]e silly when I think about it.

22. I would like to:
    a. read faster.
    b. read and read and read.

23. The important things:
    a. are sometimes overlooked on the first reading.
    b. are suddenly here—it's maturity.

24. I like to read:
    a. if I feel it is worthwhile to me.
    b. anytime it's quiet.

25. I don't like to read:
    a. if I can't get something from it.
    b. at a motion picture.

26. The ideas I read:
    a. sometimes change my thinking if the ideas presented are reasonable and logical.
    b. I accept as the author's, and sometimes recognize as my own.

Relationships Of Various Measures To The "Cloze"

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Introduction

Background of the Problem. In the cloze technique subjects are required to supply the words that have been deleted from a reading selection. A subject's score is one index of his ability to read with comprehension.

Rankin (3, p. 131) summarized the evidence regarding the empirical validity of the cloze procedure "as a technique for measuring readability, intelligence, pre-reading knowledge, and several components of reading comprehension." He differentiated the use of the technique into (1) pre-reading and (2) post-reading, measures of reading comprehension. Although post-reading cloze scores in Rankin's study correlated more highly with other measures of reading comprehension than did the pre-reading cloze scores, it is with the pre-reading cloze technique that the present study is concerned.

Statement of the Problem: The purpose of this heuristic study is to investigate the relationships of various measures to the pre-reading cloze in a college sample.

Related Literature. Rankin (3) reported a study by Taylor (5) of Air Force personnel and one by Jenkinson (2) of high school students in which the correlations between cloze scores and intelligence quotients were .73 and .69, respectively. Jenkinson (2) obtained a correlation of .78 between cloze scores and the level of comprehension sub-test of the *Cooperative English Test, C-2.* Anderson (1), comparing *Cooperative Reading Test* scores of college freshmen with their Cattell 16 P.F. scores, characterized the good readers as introversive, emotionally sensitive, and self sufficient.

Weaver (6, p. 151) has discussed a point that will be referred to later in conjunction with the discussion of cloze-related variables. He hypothesized:

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"two elemental units in the language situation; one of the lexical for storage and retention; the other structural, a plan for storage and retention. The more redundant elements of the language then would not be involved in storage; retention would involve lexical elements primarily which can be shown to consist of short contextual units."

Rankin (4) reported that the *Cooperative English Test, C-2* correlated .06 with course marks in Educational Psychology for extroverts and .33 for introverts. No indication of control for intelligence was mentioned. Comparison of mean course marks for the two groups was not given.

Rankin (4) compared the pre-cloze reading test scores of an introvert group with the scores of an extrovert group. The groups were equated for reading achievement. The mean scores on the pre-cloze reading tests were significantly lower for extroverts, although on the post-cloze reading test no significant differences of mean scores existed between these groups. The comparability of the two groups on the variables of intelligence and anxiety are unknown to this writer.

The Study

Amplification of the Problem. This study seeks specifically to answer the following questions:

1. What relationships exist between the cloze and various measures of vocabulary, intelligence, information, achievement, personality and reasoning?

2. What relationships exist between certain cloze-related variables (incongruency, speed, etc.) and various measures of vocabulary, intelligence, information, etc.?

3. What variables enter into the multiple regression equation prediction of college grade point average?

4. How does the cloze compare with other selected variables as a predictor of grades in a reading methods course?

5. What are the relationships between the 16 P.F. Extroversion-Introversion factor and intelligence, cloze, the 16 P.F. second-order anxiety factor, and college grade point average?

Definition of terms.

1. Connective words: conjunctions, prepositions, auxiliaries, articles.

2. Content words: nouns, verbs, adjectives, adverbs, gerunds.

3. Connective/content ratio score: percentage of connective word completions correct compared to the percentage of content word completions correct; ratio of structural comprehension to lexical comprehension.

4. G.C.I.A. score: percentage correct grammatically of those cloze responses that were incorrect; (each deleted word is categorized according to its part of speech in the context.)

5. Second-order anxiety score: 16 P.F. score; related to factors denoting excitability, insecurity, suspiciousness, jealousy.

6. Second-order extroversion score: 16 P.F. factor (extroversion-introversion); high score, extroversion; (low score, introversion); related to factors denoting enthusiasm, sociability, unconcern, etc.

7. Incongruency score: number of times responses are incongruent with clearly-stated information in the context or with the language pattern of the sentence.

8. Structural comprehension: the understanding of interrelationships between ideas; measured by any-word deletions in the cloze technique; associated particularly with the connectives score in the cloze.

Procedure and Subjects. The subjects were thirty-two male and female college students enrolled in a senior level reading methods course.

Data-gathering instruments included the *Michigan Vocabulary Profile Test*, form Am; *Otis Quick-Scoring Mental Ability Test, Gamma*, form Fm; Cattell *16 Personality-Factor Questionnaire*, form A; and *Wechsler-Bellevue Intelligence Scale, Information* subtest, administered as a group test (split half reliability = .79). Also used were an experimental form[2] of the *Hafner Intelligence Test*, an eighty item, verbal, self-administering group test of mental ability (s.h. rel. = .71), and an experimental form of the *Hafner General Information Test*, a twenty-five item group test (s.h. rel.

= .53). The cloze test (s.h. rel. = .79) of fifty blanks was made by deleting every fifth word from an article on educational television that was unfamiliar to the subjects. The writer devised two special measures to use with the cloze test: the G.C.I.A. and the Incongruency measures.

Results

Presentation and Analysis of Evidence. The significant positive correlations of the cloze variable with intelligence, vocabulary, and information in Table I are expected. Since reading ability and intelligence are related positively to cloze scores and are among the better predictors of course marks, the relation between cloze scores and course marks is to be expected. The positive G.C.I.A. and connectives correlations and the negative incongruency correlation lend weight to the importance of reasoning in doing cloze tasks. Results are presented in Table I.

TABLE I

Rank Order of Significant Correlations With the Cloze Variable

Signif. at .01 level:

Otis Intell.	.73
Course Grade	.65
G.C.I.A.	.61
Cloze Speed	.59
Mich. Voc., Tot.	.56
Wechs. Gr. Info.	.56
Bright, 16 P.F.	.52
Fine Arts V. (M)	.48
Hafner Intell.	.46
Phys. Science V. (M)	.46
Connect. (cloze)	.45

Signif. at .05 level:

Human Relat. V. (M)	.41
Math. V. (M)	.39
Biol. Science V. (M)	.38

Signif. at .01 level:

Incongr. (cloze)	—.47

Table IIA shows a tendency for the brighter individuals to be grammatically correct on otherwise incorrect responses. Those subjects who work more *rapidly* on the cloze tend to do better on the G.C.I.A. variable; however, anxious individuals generally do less well. Results are presented in Table II.

TABLE II (A-E)

Rank Order of Significant Correlations of Major Scores With the Cloze-Related Variables

A. G.C.I.A.

Signif. at .01 level:

Otis Intell.	.68
Cloze Speed	.68
Cloze	.61

Signif. at .05 level:

Hafner Intell.	.42
Bright. 16 P.F.	.35
Sec. Ord. Anxiety	—.39

Table IIB indicates that individuals who have a higher percentage of connective word completions correct compared to content word completions usually make lower total scores on the *Michigan Vocabulary Profile Test*. This is to be expected if high Connective/Content ratio is considered to be, to no small extent, a failure in lexical items (content word completions) and if a high score on vocabulary is indicative of a good store of lexical "chunks" of meaning.

B. Connective/Content Ratio

Significant at .05 level:

Michigan Vocabulary, Total	—.42

According to Table IIC, subjects who make incongruent responses tend to make lower scores on tests of information, general reading comprehension (cloze), intelligence, vocabulary, and course achievement. (Due to the subjectivity of scoring this incongruency variable, findings by future researchers may vary considerably from these; however, the rationale for this variable seems to be substantiated by the findings, and the sign of correlations for these variables should not change.)

C. Incongruency

Signif. at .05 level:

Cloze Speed	—.35

Signif. at .01 level:

Hafner Gr. Info.	—.47
Cloze	—.47
Otis Intell.	—.48
Mich. V. (Tot.)	—.50
Course Grade	—.54

Table IID shows that subjects who work cloze tests more rapidly generally make fewer incongruent responses and make higher scores on measures of information, college academic achievement, vocabulary, general reading comprehension (cloze), and intelligence. They also tend to make fewer grammatically incorrect responses on their incorrect answers.

D. Cloze Speed

Signif. at .01 level:

G.C.I.A.	.69
Otis Intell.	.64
Cloze	.59
Hafner Intell.	.52
Mich. V. (Tot.)	.48
Wechs. Gr. Info.	.46

Signif. at .05 level:

Hafner Gr. Info.	.41
College Gr. Pt.	.41
Course Grade	.41
Incongruency	—.35

Table IIE shows that subjects who have a higher percentage of connective word completions tend to be more intelligent and to be better readers. Since structural meaning is signaled by function words (connectives), [Rankin (1959), p. 139], the assertion (p. 140) that structural comprehension is comprehension of interrelationships between ideas is lent credence by the positive correlation of the connective variable with intelligence (ability to see interrelationships between ideas).

E. Connectives

Signif. at .01 level:

Otis Intell.	.69
Cloze	.45

This writer infers, then, that the poor reader in this sample (1) works more slowly on cloze material (2) apparently does not take advantage of the structure as he might, e.g., his higher incongruency scores show a proclivity not to use the more widely separated sections of context that would aid him in completing a blank correctly, and his low G.C.I.A. scores reveal a propensity to disregard immediately adjacent context (3) stores and retains information less well (lower information and vocabulary scores) It might be inferred that the poor reader does not have as good a plan for storage and retention of information and/or he cannot or will not use his plan.

Since the readers who work more slowly on the cloze tests tend to do poorly on *congruency* (tend not to use information not near the problem) and on G.C.I.A. (related to use of immediate context) and also tend to be less intelligent and more anxious than better readers, their lower cloze scores probably reflect *can* not rather than will not. This argument is anchored in the assumption that subjects *generally* try to do well on intelligence tests and that these latter scores reflect their mental ability to do cloze tasks.

Table III indicates how seven variables contribute to the .75 multiple R prediction of college grade point averages. Two variables showing negative correlation with grade point, Enthusiastic, Talkative ($r = -.54$) and Suspicious, Jealous ($r = -.28$), contribute 24.65% and 8.395% to the prediction. Michigan Vocabulary ($r = .42$) contributes 14.54%. Course Grade ($r = .53$), Hafner Group Information ($r = .23$), and Fine Arts vocabulary contribute roughly 6% each to the prediction. No cloze variable "loaded in" on the prediction.

TABLE III

Variables Entering Into A Multiple R Prediction of College Grade Point; Zero Order Correlations; Score Weights; Beta Weights; Variance Proportions Multiple R; and Constant

Variables	Zero-order r's	Score weights	Beta weights	Variance Proportions (percentages)
Enthusiastic, Talkative 16 P.F.	—.54	—.04140	—.45427	24.646
Michigan Vocabulary (Total)	.42	.00905	.33884	14.538
Suspicious, Jealous 16 P.F.	—.28	—.00625	—.29564	08.395
Course Grade	.53	.02121	.11781	06.277
Hafner Group Information	.23	.03759	.27006	06.259
Physical Science V. (M.)	.06	—.03305	—.24172	—01.646
Fine Arts V. (M.)	.34	.02441	.18626	06.449

Multiple R = .75168 (corrected for inflation = .70)

$R^2(100) = 64.922$

Constant = 1.678

According to Table IV results, the cloze compares favorably with measures of intelligence, vocabulary, information, and college grade points as a predictor of marks in a reading methods course. Subjects doing well in the reading methods course tend to work faster on the cloze, to make fewer incongruency responses and to show fewer symptoms of tenseness, suspicion, and anxiety on the 16 P.F. test.

TABLE IV

Rank Order of Significant Correlations With Grades in the Reading Methods Course

Signif. at .01 level:

Otis Intell.	.69
Cloze	.65
Hafner Intell.	.54
Coll. Gr. Pt.	.53
Mich. Voc. (T)	.47

G.C.I.A.	.47
Biol. Science V.	.47
Wechsler Gr. Info.	.46
Fine Arts V.	.44

Signif at .05 level:

Human Relat. V.	.42
Cloze Speed	.41
Tense, Excit. 16 P.F.	—.36
Susp., Jeal. 16 P.F.	—.44

Signif. at .01 level:

Insec., Anx. 16 P.F.	—.44
Incongruency	—.54
Sec. Ord. Anx. F.	—.62

Table V shows several interesting findings. The group labelled mild extroverts* does not differ significantly in mean score from the group labelled mild introverts on the following variables: cloze speed, Otis intelligence, and cloze. The mean score of the extrovert group on the anxiety variable is significantly higher (.05 level) than the mean score of the introvert group. The introvert group achieved significantly higher (.05 level) on college grade point than the extrovert group, although mean scores on the Otis and cloze variables are not significantly different. Anxiety and extroversion appear to be associated with poorer achievement in college.

TABLE V

Comparison of Mean Scores of Extroverts With Mean Scores of Introverts On Cloze Speed, Otis, Cloze, Second-Order Anxiety, and College Grade Point

Variable	Highest Means	Diff. of Means	t	Signif. at .05 level	Signif. at .01 level
Cloze Speed	Mild Extrov. (Slow)	1.75	.96	No	No
Otis	Mild Introv.	.81	.24	No	No
Cloze	Mild Extrov.	.065	.03	No	No
Anxiety	Mild Extrov.	5.313	2.20	Yes	No
Coll. Gr. Pt.	Mild Introv.	.32	2.29	Yes	No

*Mean scores significantly higher than introverts at .01 level on Extro-Introv. Factor.

Summary of Results

1. As expected, cloze scores correlated positively and significantly with measures of intelligence, vocabulary, information, and course marks. Positive G.C.I.A. and connectives correlations and the negative incongruency correlation point to the role of reasoning in the cloze procedure.

2. a. Measures of intelligence, cloze speed, and cloze showed significant, positive correlations with the G.C.I.A. variable (grammatically correct on otherwise incorrect responses.) The second-order anxiety factor correlated negatively with the G.C.I.A. variable.

b. The negative correlation of Connective/Content ratio scores with Michigan Vocabulary Profile scores reflected difficulties in working with lexical meanings.

c. The negative correlations of the incongruency variable with tasks requiring verbal reasoning abilities and with tests of comprehension (cloze) and intelligence etc. are to be expected.

d. The subject who works rapidly on the cloze makes higher scores on measures of information, college achievement, vocabulary, comprehension, and intelligence.

e. The ability to complete blanks where function words (connectives) have been deleted is an indication of the ability to see interrelationships among ideas.

f. The assertion that structural comprehension is the comprehension of interrelationships of ideas is substantiated.

g. Poorer readers are (1) less rapid workers on the cloze task, (2) less able to use all of the contextual clues to meaning, (3) less intelligent, (4) more anxious, (5) less knowledgeable, and (6) less able to reason well than better readers.

3. Cloze variables did not enter into a Multiple R prediction of college grade point.

4. The cloze compared favorably with standard predictors as a predictor of course grades.

5. Introversion did not appear to be a differentiating factor in cloze speed, Otis, or cloze results but it was a differentiating factor in college grade point.

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Micro-Movements, Discrimination Learning, And Self-Instruction In Basal Reading

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From 1955 to 1960, our investigation of reading disability was concerned with physiological variables (1, 5, 6). The last report (6) dealt with electrolyte levels, especially Ca^+ and serum acidity (pH) on the one hand and perceptual errors on the other. The muscular tension syndrome described therein has since also been reported in the medical literature. One notable symptom of the condition is a tendency toward erratic eye-movements during reading, nystagmoid-like excursions to near-by letters or lines. What was clinically evident in that syndrome may well be present to a lesser degree in other problem readers. If so, discrimination learning must be seriously impaired.

Our initial attempts to record these phenomena were fruitless. Ophthalmographic records were too crude; electrical recordings, changes in the periorbital potential, posed apparatus problems and, later, subject problems (instability of the GSR) which were formidable. In 1962, we adapted the Mackworth Optiscan camera (3) and, despite many more problems, finally achieved some success.

I will report only briefly on our initial findings and then move on to the advances in practice which those findings made possible.

Micro-Movements[1]

The Optiscan consists of a miniature light source, a periscope, and a movie camera. The camera, as modified, is mounted on a platform atop a specially constructed chair, so that the periscope descends in front of the left eye. The image of a miniature lamp is reflected from the cornea of the left eye into the periscope, then through an optical system on to the film. The camera simultaneously records the scene image so that the lamp image is superimposed on the scene, a paragraph of print.

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[1] Co-author of the eye movement studies is Carl Semmelroth.

Distortions in such a record are inevitable. Those due to gross body and head movement were reduced by use of a series of restraining devices. Those due to idiosyncracies of corneal structure and eye musculature were reduced by modifications of the recording and analysis procedures (for example, the use of coordinates in the field for matching on playback, reduced field size, counter-distortions, etc.).

The scene, paragraph 4 of the *Gray Oral Reading Test* appeared on a screen 116″ from the subject. Print-size was equated to near-point reading. A frame by frame analysis provided the following results. (This, by the way, was a "blind" analysis. The print was not recorded. During analysis, the placement of the spot of light was recorded, frame by frame, thus providing a template. This template was then superimposed on the print).

1. Fixations in the traditional sense (.24 to .33 sec.) consist of three or more micro-fixations. (Camera speed: 14 frames/sec.; film exposure: .03 sec./frame). Movements within the .03 sec. interval are not observed except for an occasional light trace.

2. Micro-movements during a fixation appear to follow gradients forming vertical straight contours and curved ones.

3. Excursions occur when a similar word, letter or, perhaps, identifying characteristic of a letter is adjacent to the fixated word.

4. After training, excursions continue to occur but with less frequency and shorter latency. Total time for a college student reading at a high third grade level is 7.0 sec.; and after perceptual training 2.45 sec.

5. Excursions of extremely brief latency occur also in the record of the normal reader (2.52 sec.).

Visual Tracking

We had established the existence of the excursions to our satisfaction. Furthermore, self-instruction materials providing discrimination training appeared to be effective in reducing the frequency of such errors and in increasing reading speed. The training materials were extended and typography was improved.

The materials consist of 160 paragraphs of nonsense words in which the letters of the alphabet are embedded sequentially.

The task is to find the letters in sequence under a time set. Paragraphs are graded in nine steps according to type size, letter spacing and line spacing. The material is self-instructional, self-correcting and proves to be highly motivating (2).

In a validating study, children in grade one worked through only the first of the nine levels. Children in grades two through five worked on five levels. There was consistent improvement through each section, a temporary loss at each move to a more difficult level, and a similarity of result at level V for all ages.

Programming the Reading and Writing Processes

Early in 1963, the foregoing work was extended. The conception of letter and word learning as the discrimination of templates or patterns was expanded to include the learning of phrases, sentences and paragraphs. Conditions for learning were thought to include the arousal of uncertainty (4) and provision of a way for the learner to reduce uncertainty by making a one "bit" discrimination. For example:

P
Pb

Directions: Look at the one at the top.
Find the one that's the same. Circle it.

This paradigm now extends through a ten book program for self-instruction in reading, a two book program for manuscript writing and a concurrent auditory discrimination program. The first trial with slow-learning, first grade children has been underway since September. The results to date suggest that a self-paced, self-instructional discrimination program is remarkably effective for teaching basic learnings. Furthermore, the children's high level of discriminative skill is followed, first, by unusual independence, and, second, by decrease in diffuse emotionality with its attendant neurotic symptoms.

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Psychological Needs And Reading Achievement[*]

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Introduction

In recent years articulation between university counseling services and reading centers has become increasingly greater and more refined. Referrals from one campus agency to another have grown in number. With this interchange, each group has been interested in utilizing the test information gathered by the other. An intriguing query, as well as a useful one in counseling students, might be asked: Is there any relationship discernable between personality needs as measured by a forced-choice paper-pencil instrument and reading performance as measured by a standardized group test?

As part of the answer to this question, the recent literature in the field of reading research was surveyed. Only a few studies were found which pertained specifically to the college level student. McDonald (5, 6) worked with a random sample of students chosen from all those voluntarily enrolled in the reading improvement program at a reading center. This group exhibited greater anxiety, more discouragement, less success in social encounters, and weaker achievement, autonomy, and aggression needs than the average college group. They also showed stronger abasement and deference needs than their classmates. At the University of Western Australia, Anderson (1) found those who scored high on the *Cooperative Reading Test* to possess more intelligence, less conscientiousness, and a higher degree of self-sufficiency than did those who scored low. Sanders (8) reports some interesting findings using a group of male freshmen at the University of Texas. Spache (9) found a large proportion of retarded readers to be anti-social, aggressive toward authority, and over-anxious. Woolfe, et al (10, 11) draw several conclusions which indicate some personality differences between those who have reading problems and those who do not. McDonald (7) also found that personality dimensions as specified by the SA-S paper-pencil test influenced test performance on a standardized group reading test. On the other hand, Gates (2) in 1941, and Holmes (4) some dozen years later, found no relationships between reading disability and personality traits.

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[*] The research reported in this paper is part of a project on values and needs of college freshmen. Acknowledgment is due Miss Joanne E. Krudys, a Marquette University senior in Psychology. Miss Krudys did most of the statistical work and extensively surveyed existing literature on this topic.

The Present Study

The population used in this study consisted of 1475 Marquette University freshmen tested on September 9, 1963 with the *Diagnostic Reading Test* and the *Edwards Personal Preference Schedule*. The mean *Scholastic Aptitude Test* (CEEB) scores for this group were higher than the national average. The group was similar to recent Marquette enterings classes. About 40% of the class came from Wisconsin; the remainder from the rest of the United States, with a clustering in the North Central and Atlantic States. About two-thirds of these freshmen were in the upper-third of their high school graduating classes.

On the basis of the reading test scores, subgroups were selected from this population:

Group 1. High Comprehension: N = 200

Approximately the top 15% of the population in reading comprehension.

Group 2. Low Comprehension: N = 200

Approximately the lowest 15% in reading comprehension.

Group 3. Top Comprehension: N = 55

Group 3 is a sub-sample of Group 1. 55 were randomly selected from the top decile (local norms) in reading comprehension.

Group 4. Bottom Comprehension: N = 53

Group 4 is a sub-sample of Group 2. 53 were randomly selected from the lowest decile (local norms) in reading comprehension.

Group 5. Efficient Readers: N = 6

Members of Group 3, together with 59 students randomly selected from the top decile in reading rate (local norms), were invited to take the *Reading Versatility Test*. 38 students responded. These 6 students (from the 38) were judged to be efficient readers. This group had eye-movement photos taken while reading.

Group 6. Effective Readers: N = 19

Group 6 is made up of students from the following samples who volunteered to take the *Reading Versatility Test:*

55 students randomly selected from the top decile in Reading Comprehension.

59 students randomly selected from the top decile in Reading Rate.

53 students randomly selected from the bottom decile in Reading Comprehension.

52 students randomly selected from the bottom decile in Reading Rate.

A group of 38 top decile students volunteered, and a group of 30 bottom decile students volunteered.
From these 68, 19 were judged to be effective readers, (on the basis of test scores).

Group 7. Ineffective Readers: This group was selected from the 38 top decile students, and 30 bottom decile students described above. They were judged to be ineffective readers. From the total of 68 students who took the *Reading Versatility Test:*

6 (Group 5) were judged efficient, 19 (Group 6) effective, and 38 (Group 7) ineffective. The remaining 5 had incomplete *Edwards* profiles and were omitted.

No effort was made to obtain equal numbers of men and women in each group. In each group, however, the sexes were about equally represented.

* The *Edwards Personal Preference Schedule* (EPPS) was designed primarily as an instrument for research and counseling purposes, to provide measures of a number of relatively independent normal personality variables. These variables have their origin in a list of manifest needs. Brief descriptions of these needs follow:

Scale Name	Description
Achievement	The desire to accomplish something of major significance.
Deference	The desire to do what is suggested or expected and to defer to authority.
Order	The desire for orderliness, neatness, and organization.
Exhibition	The desire for attention and recognition through one's actions.
Autonomy	The desire for independence from others and for avoidance of conformity.
Affiliation	The desire for group membership and loyalty.
Intraception	The desire to analyze and understand the motives of self and others.
Succorance	The desire for understanding and support from others.
Dominance	The desire to guide, direct and arbitrate among others.
Abasement	The desire to accept blame and personal sacrifice as a means of avoiding conflict.
Nurturance	The desire to assist and support others.
Change	The desire for novelty and diversity.
Endurance	The desire to persist in the face of obstacles.
Heterosexuality	The desire for social, affectionate and physical interaction with members of the opposite sex.
Aggression	The desire to attack, criticize and blame others.

Findings and Discussion

The *exploratory* nature of this study prompted the use of the null-hypothesis in the comparison of the mean scores on the EPPS variables for the different reading achievement groups. Test of significance of the difference in means (Z test and t-test) were applied to the sample statistics. Values shown in parenthesis are the levels of significance.

Group 1, when compared with Group 2, showed a greater tendency toward autonomy (.05), and change (.20); and Group 2 a greater tendency toward deference (.01), order (.05), abasement (.10), and nurturance (.20). Thus the readers in the top 15% of their class may be said to have shown greater independence and a certain flexibility in adapting to their college environment; whereas the lowest 15% exhibited a certain amount of dependence, need for guidance, a lack of self-confidence (abasement score), and an ambivalent blaming of self and others in an effort to maintain an adequate self-concept. In general, this accords with the research findings as surveyed above.

Group 3 differed positively from Group 4 in achievement (.10), affiliation (.20), change (.20), and heterosexuality (.20). Group 4 showed a greater need for order (.20), and aggression (.10). Group 3, like Group 1, showed an ability to adapt to a new environment. Group 4 bears a strong resemblance to Group 2. Means for Group 4 on deference and abasement were higher than for the contrasting sample, though not significant at even the .20 level.

Groups 5, 6, and 7 all volunteered to take the *Reading Versatility Test*. These samples are made up of students from the top and bottom deciles in both reading comprehension and reading rate. Thus they differ from the first four groups who were selected on the basis of comprehension alone. Factors such as motivation, cooperation, attitudes toward testing and counseling, may play an important part in understanding these groups. Their willingness to volunteer for further testing may imply the presence of such factors.

The efficient readers (Group 5) are those who effectively reach their reading goals with a minimum output of energy and effort on a time continuum. This small group differed from the effective readers (Group 6) only in change (.20). Though means for Group 6 were greater in aggression, nurturance, and affiliation, the differences were not large enough to be significant. Group 5 when compared to the ineffective readers (Group 7) showed a tendency toward greater adaptability, performance, and deference. The ineffective reader showed some aggression (.20) and order (.20) needs. The small number of efficient readers in the study should not suggest that this group constitutes all the efficient readers in the class. It should be noted, however, that research has shown that less than 5% of college and adult readers are efficient (using the term as defined above).

When effective readers (Group 6) were compared to ineffective ones (Group 7) it was found that the former exhibited tendencies toward a greater need for achievement (.20), deference (.20), and affiliation (.10); and lesser need for order (.20). Mean differences between the groups showed higher averages for ineffective readers in the need for abasement, aggression, and endurance. These latter were not significant, however, at even the .20 level.

Conclusions and Implications

The *Edwards Personal Preference Schedule* as well as two reading tests were administered to a group of university freshmen. Statistical tests of the results were studied to provide some response to a question which related reading achievement to psychological needs. The exploratory nature of this study is readily admitted, and the citing of probability levels of .20 (two-tailed tests) are justified in that a direction is manifested which can be further explored with other samples.

Students who might be described as having reached a high level of reading achievement generally scored higher in such factors as the need to achieve, and the need for change and affiliation. They can be described as possessing characteristics which would motivate them to adjust readily to the new environment and to succeed academically and socially. This hypothesis will be tested after first semester grade-point-averages and other ratings are available.

Contrasting samples of low reading comprehension and low rate had mean scores which may describe them as possessing greater aggression, order, and abasement needs. These factors may act as a deterrent to adequate adjustment in a new environment. Grade-point-averages, as well as teacher and dormitory advisors ratings, will be collected on as many of this sample as can be obtained. The hypothesis of poor adjustment can then be evaluated.

Heilbrun's (3) recent article opens up a new approach in the utilization of the data gathered in this study. Trait configurations which were tentatively described in the previous paragraphs can be explored.

The efficient reader (in this study) is described as being adaptable and flexible. Is this the same as saying he is willing to make use of minimal clues to construct meaning from his readings. It would appear that this assumption is in line with the research on micro-movements as reported by Donald E. P. Smith in this same *Yearbook*.

In view of the information collected, the writers recognize that a number of additional questions seem worthy of more extensive investigation. Every effort, in such research, should be exerted to avoid contaminating effects such as placebo, Hawthorne, comparsion of students in unlike curricula, etc. Such questions might include some of the following. Would freshmen who have been identified in the counseling process as having high need for aggression, order, and abasement, also perform poorly on a reading versatility test? (This hypothesis will be tested during the coming year at Marquette University. This procedure will cast additional light on the results of the present study.) Do those freshmen, identified by the counseling process as being *less* oriented toward needs for deference, order, abasement, and nurturance, respond more readily (with perhaps occasional counseling) than those heavily so oriented? What happens when concurrent counseling and reading work are brought to bear? How may the law of diminishing returns be circumvented? Can reading approaches which are differentiated on the basis of test and counseling data be shown to have better results than those not so tailored?

A final implication centers around the instruments used in identifying the sample characteristics. If other than a forced-choice personality inventory were used, possibly the *Adjective Check List* of Gough, would similar needs be identified? Would photographing eye movements and other more sensitive specialized techniques provide a more valid basis for identifying reading groups? These and other questions will provide impetus for further exploration in the area of needs and reading achievement.

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Contra-Indications for Rapid Reading Training

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In college-adult and high school reading programs, rapid reading training is usually successful with the large majority of students regardless what methods are used. Because of this, and because we typically deal with group procedures, we sometimes overlook the occasional student who doesn't respond well to our training. It is almost axiomatic that there are some students who don't do as well as we had hoped. Many reading specialists do identify cases who are unready to benefit from rate improvement training. However, this should be a more widespread practice, and we still see many college-adult and high school programs where anyone with a reading problem (regardless of what it is) is referred to a training program that is predominantly rate oriented. While we cannot always predict which students will do poorly, there are some students for whom rate improvement is clearly contra-indicated because of the lack of basic reading skills. With such cases, help in improving these basic skills is indicated before rate improvement is attempted.

The reading instructor can identify some of these "unready" cases if he:

1. listens to the student's description of his reading problem,
2. hears the student read material at his level (college, adult, or high school), and
3. observes the student's performance in rapidly recognizing simple and difficult words, presented alone and in brief phrases by tachistoscopic or flash card presentation.

Many instructors do not have contact with their students before group activities start. However, individual contact, as described above, can and should be carried out for students who do not make the very easy initial gain in the early part of training. Students who report that they become confused and lose most

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understanding when they try to read more rapidly, particularly need to be check individually. If they need specific help other than rate improvement, they will be spared the frustration failure experience of not improving with their group and if they get the specific help they need, their rate may increase incidentally.

I would like to discuss a few cases where rate improvement was unsuccessful and contra-indicated.

Bob was a very bright boy who read adequately with good comprehension. He read slowly and his own description of his reading problem was that he had to re-read a lot. In oral reading, it was apparent that Bob made many elementary errors. He would often misidentify a word as one that had the same general appearance and initial letter. He compensated for his errors by an excellent use of context with much re-reading to bring meaning in line with context. Tachistoscopic exposures increased his errors enormously and when he tried to read more rapidly, his comprehension dropped seriously (not just the usual initial adjustmental drop of many students).

Bob had been a problem reader until high school and he lacked the accurate perceptual discrimination of words normally achieved in elementary school. He was given training in perceptual discrimination of words. While some kinesthetic practice and filling in blanks left in words were used, most of his training was in rapidly discriminating words from other very similar words. Each common word that he misperceived was exposed at one tenth of a second in a sequence of exposures including a group of words which differed from it only in one or two letters. By starting simply, Bob soon stabilized a rapid and accurate perception of words. His oral reading became more accurate. His rate increased tremendously because he didn't re-read. The following year he took the rate improvement course he had previously not been able to handle and showed good gains in rate without loss of comprehension.

Another perceptual problem was Jim, who was enrolled in a pre-college reading course. Jim was totally unable to see even simple words when exposed at one-tenth of a second. His reading gave him no trouble except that it was very slow. There was not much re-reading. Films, pacers, and even trying to read faster left him feeling he had not even seen the material. The basis of Jim's difficulty was never clear to me but daily using multiple exposure of simple words in a card tachistoscope for several weeks suddenly achieved a break-through. Somehow, Jim had learned to process a word when seen only briefly and he was able to go back into his reading group and achieve rate improvement equal to the average of his group.

Betty is typical of cases that all reading specialists have encountered. Rate improvement films made her eyes tear and ache and gave her a headache. (The usual suggestion of moving with the fixation control, not after it, had no effect.) Betty reported that even normal reading for more than a few minutes made her eyes and head hurt. She completed a short rate improvement course with no improvement. Betty had a recent eye examination with a report that her acuity was normal. In contrast, however, visual screening showed fusion difficulties, poor stereopsis, slight exophoria, much alternating suppression. Eye camera films were like a first grade child on some lines and were reasonably adequate on a few lines. In the *Spache Test of Binocular Reading*, Betty repeated the last word of several lines, indicating not only lack of fusion in this easy task but also that the double image didn't seem unusual enough to complain about. She also showed some suppression.

During the next few months Betty's mother took her to another vision specialist who was concerned with functional vision. He found severe difficulties and gave orthoptic training. Later, reading testing showed that Betty's rate had increased up to the average for an untrained student without any strain. On her own she applied some of the techniques learned in her unsuccessful rate improvement course and she reported considerable success. Eye camera films and vision screening showed much improved performance.

Jose was an intelligent boy who read with poor comprehension. His oral reading, his own report, and tachistoscopic testing showed poor word recognition. Once he learned a word, he had accurate and quick recognition of it but, because of a Spanish language background in his home, he hadn't learned the sound associations that facilitate rapid recognition as well as normal word analysis.

Rate improvement was delayed for a year during which time he built his recognition vocabulary and developed skills in automatic phonics and use of word parts in rapid recognition. The following year, he was one of the best students in a course of rate improvement.

These are just a few illustrations and I am sure there are other conditions which may handicap or prevent rate improvement. The factors I want to stress are inadequate basic skills:

Inadequate perceptual discrimination for Bob and Jim that was apparent in their oral and tachistoscopic reading; inadequate visual skills for Betty which was reflected in her description of her reading problem (we can only hope that referral of such cases for visual examination will result in an examination for functional vision and not just acuity); inadequate sound associations for Jose which was apparent in his oral and tachistoscopic reading.

In each of these cases and certainly in many others, the lack of initial gain in a rate improvement course should attract the instructor's attention even if there was no individual pre-training testing. Group testing for rate and comprehension would not have differentiated these students from many that would benefit from rapid reading training. Once the instructor was aware of the potential problem cases, he could get some insight into their difficulties by: listening to their description of their reading difficulty; hear them read an appropriate passage orally; observe their performance (after a little practice if possible) with rapid recognition of simple and complex words.

The real purpose of identifying contra-indications for rapid reading training is not just to save the student from the frustrating failure experience but to help him correct the weakness in basic skills so that he can become a better reader, using flexibility for more rapid rate.

PART III

Critique Of Current Research In College And Adult Reading

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This report is limited to college and adult research published between September, 1962 and August, 1963. The studies reviewed in the preparation of the report were limited to those employing an experimental research design. Investigations of reading interests, readability studies, research in the sociology of reading, and studies of teachers of reading were not considered.

All the experimental research published during the time period stated is not cited in the report. This is not a review of research but a critique. When research studies are cited they are only used as examples.

The report is limited also by the ability of the evaluator. In any critique the knowledge, experience, intelligence, and perceptiveness of the evaluator must be a limiting factor.

A critique is an evaluation of a group of judgments about merits and faults in light of criteria. The criticism of current research in college and adult reading will be based upon ten selected criteria (stated as questions). The criteria follow:

1. Is there evidence of the research growing from some type of conceptual framework?

2. Does the investigator show bias?

3. Is the research well designed?

4. Since research in reading is concerned with such a narrow part of human behavior, have as many variables as possible been controlled?

5. Is more than one measurement device used in helping to evaluate reading achievement?

6. Does the Hawthorne or placebo effect interfere with the study?

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7. Are conclusions and implications directly related to the findings?

8. Can the results, conclusions, and implications be turned to practical use?

9. Can the study be replicated if necessary or desirable?

10. Is the research report well written?

CRITERION ONE—*Is there evidence of the research growing from some type of conceptual framework?* Presumably, investigation grows out of the perception of a problem. Logically, a solution is not designed until the investigator finds out whether or not solutions already exist. Upon becoming steeped in past research and learning that the problem is not solved, he may then establish a clear or clearer operational framework for the investigation. It is the job of the investigator to show the reader of the research report how and why the investigation came into being, and what its place is on some conceptual continuum.

If we turn to Allen's study of illiterate inmates of a reformatory and their use of the Laubach Literacy Course of Study[1], we find an example of an experiment seemingly growing from no conceptual framework. Related literature is used only sparingly to emphasize the degree and problem of illiteracy rather than to review the overall research pertinent to such an investigation. The study is a good example of how not to report, both in the light of presenting no related research and other factors to be mentioned later. Henry Austin's study of the effects of a reading improvement course on oral reading[2], suffers from the lack of exploration into past research. In this case, lack of such exploration results in a narrow and naive concept of reading which undermines the value of the investigation.

On the other hand, Rankin's study of reading test reliability and validity as a function of introversion—extroversion[3], and Woolf's study of the TAT and reading disability[4], are examples of studies growing out of a careful investigation of related research. In Rankin's study, the reader finds the investigator's hypothesis reasonable and important because the discussion of earlier studies naturally led to the setting up of such an hypothesis. Woolf did very much the same thing in leading up to a logical purpose for his study.

About fifty per cent of the college and adult reading studies published between September, 1962 and August, 1963 presented findings of some earlier research and related it to their problems.

CRITERION TWO—*Does the investigator show bias?* Bias does not appear to be a serious problem related to published research in reading at the college and adult levels. Less than ten per cent of the studies appeared to reflect bias. And even so, bias ranged from a vague possibility to, in only one case, a blatant reality. Allen's study mentioned earlier was completely biased—at least as it was reported. The investigator liked the Laubach materials, found them effective, and preached about them throughout the report.

Philip Vernon's study of the determinance of reading comprehension[5], McCord's pilot study of hypnosis as an aid to increasing adult reading efficiency[6], and Liddle's results of experimentation on the Wood Reading Technique[7] probably suffer from the use of words that appear to indicate bias rather than from bias itself. Vernon, brought up under a European system of education, reported that he was struck by the weaknesses of contemporary tests of educational abilities in the United States. He also indicated that the British subjects used in his study were superior to the American subjects but gave no evidence of this superiority. McCord appeared to be "convinced of" the use of hypnosis in reading improvement on the basis of little evidence—one subject. Liddle started to describe his study by talking about how "pleasurable" it was to be able to be involved in a study of the Wood Reading Technique.

CRITERION THREE—*Is the research well designed?* In this report a research design is considered the plan following an explanation of related literature that starts with statement of problem or purpose of investigation and ends with collection and treatment of data. Findings, conclusions, and implications grow out of a design and should not be considered a part of it, even though the investigator may make certain educated guesses about his findings prior to the conducting of the study.

Purpose. Clarity of design demands some statement of purpose prior to the development of parts of the design. About sixty-five per cent of the studies made a clear statement of purpose at the outset. Most did so eventually. The only study reviewed that did not appear to state a purpose was Liddle's results of experimentation on the Wood Reading Technique.

Hypotheses. Following statement of purpose, hypotheses should be stated perhaps in the form of statements to be tested or possibly, and this seems to be in the popular vein, as questions to be answered. Cheris and Austin in a study of silent reading[8], Raygor and Wark in an evaluation of programmed learning in teaching reading comprehension[9], and Vernon either did not mention hypotheses at all until the end of the report or tucked them in with other topics. Cheris and Austin, and Raygor and Wark referred to rejection of hypotheses mentioned for the first time when they were rejected.

Definitions. If terms are being used that do not have commonly-agreed upon definitions, the investigator should define such terms before launching into the description of his design. Since the terms will be used throughout the design, it seems wise to define them at the outset.

Subjects and Materials. Most of the studies do not clearly state subjects and materials prior to procedure. Schneyer, in a study of factors associated with the progress of students enrolled in a college reading program[10], does a particularly fine job describing his subjects. Rankin's study mentioned earlier, which is a description of three investigations, provides an excellent description of materials and subjects, although the reader sometimes wishes that Rankin had used and stuck with one particular pattern for the three descriptions. Kamman's investigation of aptitude, study habits, and reading improvement[11], is excellent in terms of a full and adequate description of subjects and materials. Kamman, however, (as did Cheris and Austin, and Rankin) used two forms of a standardized reading test (the *Diagnostic Reading Survey*), that are probably not equivalent. Raygor and Wark used the same test but did not mention forms, although they called them equivalent. Cheris and Austin altered the normal scoring of the test and computed a corrected silent reading score for each student; they multiplied rate times per cent of general comprehension. Hence, as they stated, 300 words per minute with eighty per cent accuracy would be corrected to 240 for the silent reading score. But they never thought far enough about the pitfalls involved. What of the student who reads 600 words per minute at forty per cent comprehension—this also equals 240!

Raygor and Wark never did identify the student they labelled as RSSC students, although the reader might judge them to be members of, perhaps, a "reading skills study center." Raygor and Wark established their control group from records in file; hence, these students were not aware of the experiment, while the experimental groups were. Also the investigators had no way of knowing what concepts of "programming" the controls might have inadvertently been exposed to. Nevertheless, Raygor and Wark's study was a well-planned study and they were aware of some of its weaknesses. Obviously there are times when a study can contribute important ideas and still all the important factors cannot be controlled. Kamman recognized this and certainly did not hesitate to state that his study was limited by lack of a control group. Indeed it was, and yet some of the information he accumulated makes contributions to knoweldge and opens the way for further investigation.

The situation is very different, however, when the investigator does not recognize the limitations of his subjects or materials and draws incomplete conclusions or even states implications based on such limitations. Austin, for instance, used seven students as an experimental group and six as a control under questionable conditions and then went on to draw certain conclusions about reading and college students. McCord came to a definite conclusion on the basis of one subject's performance. About two thirds of the investigators, however, were extremely cautions describing subjects and materials and limiting conclusions to the sample.

Procedure. About seventy-five per cent of the reports presented logical and clear procedures. Schneyer and Woolf's studies are particularly good examples of consistent and well-planned procedures. Vernon permitted inconsistencies related to the timing of tests without clearly adequate reasons and seemed, therefore, to be gathering data of questionable validity. Austin, and Cheris and Austin exhibited many flaws in procedure which seemed to stem from lack of thorough planning and study of related literature. As Clymer has said, and this is particularly valid in thinking of procedures, "There is no correction possible for a poorly designed study once the data are collected."*

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*Theodore Clymer, "Research Design in the Language Arts," *Elementary English*, 39, April, 1962, p. 350.

Collection and treatment of data. It became obvious in viewing all of the studies that those with a thoroughly adequate research design up to the point of collection and treatment of data also determined the methods of collection and analysis in advance. A few designs appeared to change from step to step and as the experimentation moved along, these investigators seemed uncertain of how they expected to treat the data once they collected it. In general, though, researchers seemed to be rather sophisticated in their choice and use of statistical measures, at least those investigators who appeared to be specialists in the area of reading. At times too much reliance appeared to be placed on significance of a statistical nature implying that it was certain to mean signifance of an educational nature; this implication also appeared to carry over into correlations as though they were cause-effect relationships. It is also important to keep in mind, as did Woolf, that data not lending itself to statistical treatment is still important and needs logical analysis; it is not discarded or not discussed because it cannot fit into some statistical framework.

Some of the research designs do not seem to be carefully thought through before hand; investigators often admit limitations at the conclusion of the research which would really have raised questions about conducting the research initially. If the possible limitations are studied in advance and yet the research still holds promise, then the investigator may want to go ahead. If limitations accrue during the study so that the results of the study really become rather useless in light of the limitations, the report ought not to be made. Perhaps it ought to be "tossed into the circular file" and "chalked up to experience," or used as a model to keep others from making similar errors.

When a report is printed and read by readers who may be somewhat unsophisticated in reading and evaluating research studies, they may come away with concepts and conclusions they consider of great validity since the work reported grew out of "research". Another danger is that the research may be summarized tersely, or the conclusions may be removed from the total report and placed in a secondary source where limitations may not be visible. Then, over the years the summary or the conclusions may be reported and reported and reported in various other sources until they almost appear to be fact, rather than a report of research that may have been very limited and may not really make the valid contribution assigned to it by the secondary source.

CRITERION FOUR—*Since research in reading is concerned with such a narrow part of human behavior, have as many variables as possible been controlled?* Although this criterion, and numbers five and six that follow are truly part of "good design", they are important enough to consider singularly.

This is certainly a difficult criterion to meet. Most research would be impossible if we were forced to control all of the variables that ought to be controlled; we probably could not do so anyway since we work with that very unpredictable creature—the human being. But we know that we can measure one factor better if we attempt to control as many others as possible. Allen controlled some, merely because the subjects of his study were confined in a reformatory to begin with, but outside of this natural control there appeared to be little attempt to control other variables. In Liddle's investigation, there seemed to be no attempt to look at similarities or differences between the control and experimental group in terms of ability, tasks performed during the time of the experiment, et cetera.

Perhaps difficulties related to this criterion could be lessened by a careful thinking through of the total study before its inception. It seems that sometimes an investigator, enthusiastic and eager, gets caught up in the doing before he has completed a plan. The same problems, to some extent, are reflected in criteria five and six.

CRITERION FIVE—*Is more than one measurement device used in helping to evaluate reading achievement?* Investigators in the past and a few involved in recent research reported by Bliesmer recognize that standardized reading tests have many flaws and that there are a number of factors at work that raise questions about their dependability. A score on a test is not an overall measure of reading achievement or ability but a measure of reading performance on that test. When reading is evaluated, most investigators and authorities in the field have stated that many factors should be considered. But what really happens? Less than twenty-five per cent of the studies surveyed used more than one measure. Vernon used objective and subjective tests of literal and inferential comprehension. Kamman and Schneyer both used a reading test plus the Survey of Study Habits and Attitudes, if that test can be thought of as some sort of reading test. None of the studies at the college or adult level used a subjective measure of reading achievement in juxtaposition to the objective.

CRITERION SIX—*Does the Hawthorne or placebo effect interfere with the study?* About twenty-five per cent of the studies appeared to be hindered by the Hawthorne or placebo effect and another twenty-five per cent gave such little information about subjects that it was really impossible to determine whether the effect was operative or not. Raygor and Wark recognized that the Hawthorne effect may have operated in their study, and McCord recognized the possible placebo effect of the hypnotic trance. The Hawthorne effect is evident in Austin's study.

Careful planning and thinking through of the total design and possible outcomes might help investigators prevent at least some of the Hawthorne or placebo effect. Granted it is difficult to control and at times almost impossible, but there is more of a chance of controlling it if the investigator will carefully think about the possibility and then structure into the research design some counter-effect.

CRITERION SEVEN—*Are conclusions and implications directly related to the findings?* This criterion was generally met, at least among the studies reviewed. Investigators tended to be cautious.

Allen, in his study, suggested that he was presenting eight conclusions, but really only presented one and the others were more or less findings and a description of the materials used. Austin drew a conclusion and presented an implication related to the use of a reading pacer and training in oral reading that appeared far removed from an accurate analysis of his data.

A few investigators gave no conclusions and a number suggested no implications. This policy seems rather inadequate. If the report is an interim report on a larger study, it seems feasible that there may be no conclusions (or no findings for that matter), but for the normal research report there should be conclusions and there should be implications which are based on findings. True, the conclusions and implications may be guarded, but the reader should get the benefit of the investigator's closeness to the study.

CRITERION EIGHT—*Can the results, conclusions, and implications be turned to practical use?* Seventy-five per cent of the time some part of the results, conclusions, or implications could be utilized as long as the weaknesses inherent in the study were kept in mind. Raygor and Wark certainly contributed practical evidence that programming in teaching reading comprehension is valuable even if the "program" is not strongly designed. Vernon gave some indication of the need for test revision and the rethinking of some of the concepts involved in testing. Preston, in a study of the validity of reading tests[12], concluded that standardized reading tests cannot be very valid when students can answer questions prior to reading the test passages. Rankin gave us another reason to doubt the dependability of standardized tests as he related results to extroversion and introversion. These contributions can be considered practical for this knowledge can be put to use.

Probably these investigators should do more. They should suggest how the findings can be made functional (mindful of limitations), both in the classroom and in the clinic, and even in the dean's office. There needs to be a faster outlet for research than the long wait involved before a company discovers some palatable research findings, or conclusions, or implications, and begins to merchandise the procedures and materials growing from them.

CRITERION NINE—*Can the study be replicated if necessary or desirable?* About two-third of the studies could be replicated just by following the design as reported. The rest are not beyond being replicated, but more information would need to be obtained from the investigators since the reporting did not seem to be complete. If we are to move away from fragmented research and research that does not lead to any practical procedures, it is essential that studies be replicated to be sure that the results (plus the conclusions and implications growing from them) are dependable and useful for as many students and in as many situations as possible.

CRITERION TEN—*Is the research report well written?* One of the chief difficulties related to research studies in college and adult reading appears to reside in the way the report is written. The actual research design may be adequate but often the way the report is presented makes the design appear confusing. It is indeed hard to determine which is which, but this evaluator tends to believe that many good research workers cannot write well. So many reports are cluttered—they are not laid out neatly in a sequential fashion. How unfortunate if the report embellishes the actual research; yet how tragic if the report does not do the research justice.

There is also at times a confusion about terms. Some investigators use "significant" in a number of ways in the same paper. Hence at one time "significance" relates to a statistical significance and at another time to an idea or educational principle. There also appears to be some confusion about what is a sample versus what is a population. Null hypothesis appears to be used inconsistently. If investigators are going to help readers understand what they write, they ought to develop a somewhat common technical vocabulary.

Only about forty per cent of the research reviewed was stated in clear sequential order. Granted this is sometimes due to lack of space or poor editing, but nevertheless, it should not exist. There is no excuse for the lack of organization in Vernon's fine research. The style of reporting damages the effectiveness of his investigation.

All research certainly does not have to be written in the exact same way. There is no reason why there must be a completely similar mold. But certainly there needs to be some framework that is logical in nature. Perhaps journals and monographs should establish patterns for reporting research to be deviated from only when essential. Perhaps this concept comes from a literal-minded and inflexible evaluator, but this evaluator suggests that research in college and adult reading of an experimental nature include the following information in some sequential and somewhat discrete order:

Related research
Significance of the research
Purpose(s)
Hypotheses
Subjects
Materials

Procedure
Findings
Conclusions
Implications
Suggestions for further research

Attention to these areas in readable fashion seems, in this evaluator's opinion, to be an obligation of the investigator.

Obviously, there are limitations imposed on research by numerous situations. Research dealing with human beings cannot be perfect, but certainly every effort needs to be made to work toward perfection. This evaluation is not intended to discourage research but rather to encourage research. Readable information, growing out of a research design which was thought through carefully and conducted with integrity, can be of direct rather than delayed assistance to the reading instructor.

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1963 Review Of Research In College-Adult Reading

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This review covers, for the most part, reports of research relevant to the college-adult reading area appearing in periodical literature and other sources through September of 1963. Several reports which were missed in the last review (4), or which were not otherwise available at the time the last review was being prepared, have also been included. Treatment of the various reports or studies has been done under several major headings, following the custom of previous years. Since the last previous review (4) was prepared, Summers (35) has presented an analysis of some studies in college and adult reading. All the twelve studies involved in Summers' analysis were treated in the annual reviews presented previously at this Conference. Summers has also again presented annotated lists of doctoral dissertation research in reading (based on reports or abstracts appearing in *Dissertation Abstracts*) for 1961. (33; 34) The few studies related to college reading which appear in the annotated lists have also been reported at this Conference in previous annual reviews.

A rather noticeable decrease in the number of reports relevant for this review appearing in the literature since the time of preparation for the last previous review is to be noted. A part of this decrease may be attributed to the fact that two usual sources of reports pertinent for this review had not yet been published, or were not yet available to this reviewer, at the time the 1963 review was being prepared. These sources were the *Twelfth Yearbook* of this Conference and the *Proceedings* of the 1963 annual meetings of the International Reading Association.

Reading Programs (Reports, Surveys, and Analyses)

A number of references cited in this review were reports of specific reading or study skills programs or involved, in part, explanations or descriptions of specific programs. (1; 2; 3; 5; 7; 9; 22; 25; 28; 35) As has been pointed out frequently in past reviews, and was included among generalizations made by Summers in his analysis (35:5), practically all programs were reported to have resulted in reading gains of some type; the programs varied greatly with regard to various aspects or factors; and use of control groups and/or tests of significance of results (statistical tests) was lacking in many reports or studies. Evaluation instruments and methods of evaluating or assessing gains in programs continued to vary considerably. Participation in reading improvement programs of various sorts continued, reportedly, to result in an increase in general reading skill or ability scores. Difficulty in evaluating the reading program gains or assessing effectiveness of reading programs was pointed out directly in one report (1:276), as was also the fact that a number of possible secondary gains are usually not considered or given consideration in evaluation procedures. Several reports involved pre-college reading improvement programs. (1; 5; 27)

Several reports involved, mainly or in part, a comparison or an analysis of methods of promoting reading skill improvement. (5; 7; 22) Buckley (7) presented results obtained with a closed circuit television reading improvement program and those obtained with a control group taught by identical methods except for the personal, or face-to-face, contact with the reading teacher, in University of South Carolina reading improvement courses. Six sessions with adults whose reading levels were eighth-grade or better were involved in both types of programs. No significant differences were found in the progress of the two groups except with respect to reading rate, in which case the television group had made greater gains. Lafitte (22), who presented a report at this Conference last year, compared results obtained with three different types of methods in a Winthrop College reading improvement course. All methods related to perceptual training procedures. One of his three matched groups of freshmen practiced skimming procedures, one was given perceptual training, and the third group was given a combination of both procedures. Lafitte reported that both skimming and perceptual training techniques appeared to bring about gains in reading speed; but comprehension gains were not significant for any of the three groups. Accomplishment of significant rate gains, but lack of comparable gains in comprehension, was also indicated in another report. (28)

Braam (5) reported reading flexibility attained with a group of 71 college-bound senior high school students in a Syracuse University summer program of six weeks duration. "Flexibility tests" were administered at the beginning and at the end of the program. Both gross rate and effective rate (rate score in terms of words per minute multiplied by a "per cent of comprehension" score) were relatively low at the beginning of the program; and the range of rates, for the five different areas tested by or measured with the flexibility tests, was very low for both kinds of rate. At the end of the program, both types of rates were much higher; and the range of both types of rates had greatly increased, in comparison with pretest rates. (On the pretest, gross rates for the five areas ranged from 211 to 230 words per minute, effective rate from 158 to 172 words per minute. On the posttest, gross rates ranged from 649 to 808 words per minute, effective rates from 450 to 610 words per minute.) Instructional methods used, if any, for promoting flexibility were not explained by Braam.

The pre-college reading improvement program reported for the University of Colorado also resulted in positive gains, with an average increase of "around 20 rankings" (percentile ranks). The report of this program had indications that a number of other favorable results not measured by the tests used were also achieved.

A partly subjective analysis of a program at New York City Community College has been presented by Nelson. (28) Ninety-six student were placed in five class sections according to deficiencies (relative to *Diagnostic Reading Test* scores). Nelson reported that most improvement was made in vocabulary, least in comprehension. Only one student lost in comprehension skill as reflected by posttest scores. In the three better sections in which speed reading was stressed, rate gains ranged from 75 to 104 words per minute (test score gains). The median reading grade level of the students participating increased from eighth grade to eleventh grade. Nelson reported that approximately two-thirds of the students "received a grade sufficient to matriculate in a degree program" (28:242). This "grade" apparently referred to achievement at a tenth-grade level on the *Diagnostic Reading Tests*. The difficulty in obtaining or showing improvement in reading comprehension was pointed out by Nelson also. Of the 96 students in the program, slightly less than half of the students "gained from 5 per cent to 30 per cent", approximately one-third "lost from 5 per cent to 30 per cent", and no gains were made by approximately one-fifth of the students. (28:241).

Spelling improvement programs, as part of or separate from college reading improvement programs, have also been reported. Maxwell (25) has presented a brief discussion of remedial spelling programs conducted at the University of Maryland. The program, of a self-help type, has had rather favorable student response, according to Maxwell. A teaching machine program (13) conducted with sixty introductory psychology students resulted in both control and experimental groups improving in ability to spell thirty words chosen from a freshman English text. The greater average improvement of more than two words obtained by the experimental group was significantly greater. A recheck test administered to groups approximately a month later indicated maintenance of significant superiority of the experimental group.

Factors Influencing Reading and Study Skills

A number of reported studies dealt with, or had pertinence for, factors affecting development or attainment of various study skills of college students or other adults. Anderson (2) found a significant relationship for college males between academic motivation ("need achievement") scores and gains or losses in reading achievement, as measured by the *Iowa Silent Reading Tests*. Nelson (28) found that student motivation, as evaluated by instructors in a New York Community College reading program, was relatively highly correlated with comprehension gains (as measured by the *Diagnostic Reading Test*). Nelson further reported that very few "poorly motivated" students made gains.

Brownrigg (6) found a substantial positive relationship between informational achievement and reading ability of college drafting students. Drew (11) studied the relationship of, among other factors, general reading ability to the school and job performance of machinists apprentices.

Katz and Deutsch (20) found that good readers differed significantly from poor readers, "at all ages", with respect to the ease with which attention could be shifted between auditory and visual stimuli. Kamman (19) found that *American College Tests* scores negatively predicted comprehension of vocabulary gains (as determined with *Diagnostic Reading Tests*) achieved in a reading program with University of Cincinnati freshmen. In his study of rate flexibility of students in a pre-college program, Braam (5) found little relationship between difficulty and posttest rates on the five different areas of the flexibility tests; in fact, the highest rate was achieved on the most difficult area, psychology. McCord (26) reported giving a "middle-aged male" Form A of the *Nelson-Denny Reading Test* and then putting him in a hypnotic trance; afterwards it was suggested to the subject that he would do much better in several respects on a second test, Form B of the *Nelson-Denny Reading Test*. Scores of the subject reportedly increased from the thirtieth to the eightieth percentile rank (college senior norms).

Rank (29) reported, briefly, the results of a study conducted by McClendon in which the purpose was to find the effect of note-taking practice on listening comprehension. Approximately 675 randomly drawn University of Iowa freshmen in a communications skills program were divided into various groups. Some groups took notes on main points only, some on main points plus details, some in "their usual manner", and some took no notes. No differences in listening comprehension were found among the various groups on either immediate recall or delayed (five weeks) recall as measured by tests on lectures on which the notes were taken.

Several of the studies found reported had a bearing on influence of dominance or laterality factors on reading or related skills. (15, 17; 21; 38) Goodglass and Barton (15) found that visual stimuli appearing in the major cerebral hemisphere (left or right visual field) were not perceived more readily as language. Verbal stimuli appearing in the right visual field were perceived at a lower threshold of recognition for both left-handed and right-handed individuals. Harcum and Friedman (17) found fewer errors when target-shaped photographs were presented in a left-to-right fashion than when targets were presented in any one of several other spatial-temporal conditions. Subjects in their study were college students with normal vision, or, thus, ones who had a left-to-right reading history. Kinsbourne and Warrington (21) found that among referrals made for "backwardness" in reading or writing, or both, groups with higher Wechsler verbal scores differed on tests of finger differentiation and order from subjects with higher Wechsler performance scores, with the latter group doing better on tests of finger differentiation and order and the former group (higher verbal) exhibiting poor performance on such tests and showing significant retardation in right-left orientation. The small number of right-handed subjects with "right hemisphere disease" and reading disability studied by Warrington (38) were found to make reading errors limited largely to the beginnings of words. This perception abnormality was noted in other visual forms as well as with words.

Influence of Reading Skills

An earlier study by Austin (3) led to a better-planned study, by Cheris and Austin (9), of the effects of a reading improvement course on oral reading skills. The eighteen University of Michigan speech students participating in the reading improvement program were found to have made improvement in silent reading; and they also made significant gains over a control group with respect to oral reading speed and accuracy. No relationship was found, however, between rapid silent reading and total amount of "audience-eye contact" during oral reading.

Heavey's analysis of the *Scholastic Aptitude Tests* (18) led to the conclusion that vocabulary development and skill play a large part in the success on that test, particularly with regard to meeting college entrance requirements. Lasater (23) reported that his review of the literature resulted in his finding only twenty cases in which reading was reported to be the specific stimulus for the onset of an epileptic seizure. He summarized four cases which had occurred in the past three years and which he wished to add to the twenty previous ones recorded in the literature. He averred that seizures could be avoided by terminating reading activity as soon as the beginning of involuntary jaw movements was detected.

Two of the three groups of students enrolled in a pre-college developmental reading program at the University of Colorado were given alternate forms of the *California Capacity Questionnaire*, and a third group was given alternate forms of the *California Short-Form Tests of Mental Maturity*, at the beginning and at the end of a course. (27) The increase in scores obtained with posttests led the investigator to conclude that skill in reading can influence performance on paper and pencil intelligence tests even when tests used "do not largely depend" on reading questions. Wientge and DuBois (39) found that eighteen of seventy biographical items (a number of which fell under the grouping, "reading interest") gathered for over 5,000 adult students, had a validity of .07 or more for predicting median course grades of those students.

Miscellaneous (Habits and Traits, Reading Tests, Readability, and Other)

According to one report (36), approximately 8.3 million Americans over twenty-five are classified as "functional illiterates", with about 2.8 million of these having *no* ability to read or write. Although the South is reported to have the highest percentage of illiterates, on a state-by-states basis, the problem is considered to be national rather than regional, with the largest concentration of illiterates being found in urban centers across the country. Most of the literacy education programs apparently are being carried out by public school adult education programs and by private groups and foundations (rather than by colleges and universities); and the programs presently in operation do not appear to begin to meet demands, either in quantity or in quality. Mention is made of U. S. Office of Education figures which show that, of over 15,000 school systems studied, slightly under 5,000 reported any type of adult education program being conducted; and of these latter systems only 160 (3.3 per cent) offered basic literacy education instruction.

Several reported studies involved reading tests and testing, in various ways. Burnett (8) has described the construction of a test for measuring skill in using diagnostic procedures in reading. A group of trained reading specialists scored significantly better than did a group of regular elementary teachers; and the elementary teachers scored significantly better than did a group of students enrolled in elementary undergraduate courses. Heavey's stress on the need for formalized help in vocabulary development for high school students if college entrance requirements, relative to *Scholastic Aptitude Test* scores, were to be met (18) was referred to in an earlier section of this review. Early reference was made, similarly, to McCord's study of the influence of reading skill on performance on group intelligence tests (27) and Wientge and Dubois' study (39) of relationships of various biographical items to course grades. The flexibility tests used as pretests and posttests in Braam's study (5) each consisted of from 750 to 900 words, representing five different kinds of material (fiction, literature, science, history, and psychology), with the two selections for each area having been taken from a common source. Selections for the five areas ranged in difficulty (Dale-Chall readability formula) from approximately ninth-grade level to college senior level.

Kamman (19) found *American College Test* scores correlating higher with *Diagnostic Reading Tests* scores than with *Scholastic Aptitude Test* scores, with this being true only relative to *Diagnostic Reading Tests* administered at the beginning of a reading improvement program. As was pointed out in an earlier section, the *American College Test* scores were found to be negatively related to amount of gain achieved in a reading program (relative to comprehension and vocabulary scores on the *Diagnostic Reading Tests*). Endler and Steinberg (12) found the reading subtest scores of the STEP to be more highly correlated with grade-point averages than were other aptitude and achievement test scores involved in their study; but high school averages were found to be still better predictors of grade-point averages (first year of college).

Rankin (30) reported finding, as he also did at this Conference last year, a relationship between "introversion-extroversion" and test validity and reliability. Rankin reported three separate studies, involving a cloze test procedure with groups of college students enrolled in reading improvement classes, the *Cooperative English Test* (C2, Reading Comprehension) used with high school students, and the *Diagnostic Reading Tests (Survey Section)* used with college students.

Schiavone (32) has discussed in some detail development of a reading program for adults in which groups are placed according to grade level. Lowe's briefly reported survey of college-adult reading improvement programs in Virginia (24) gave indications of the inadequacy of information yielded by large scale surveys of national scope conducted in the past.

A study of reading preferences of psychiatric patients (14) yielded findings which indicated differences in book choices of different diagnostic groups. Included among the hypotheses derived from their study were that reading of "schizophrenic reaction" patients reflects a high level of interest in philosophy and religion books, that "schizophrenic" patients tend to maintain contact with the outside world vicariously by nonfiction reading and avoidance of fantasy types of reading, and that "character disorder" patients reflected by their book choices a typical lack of superego and rebellion against cultural conventions.

Several studies were concerned, mainly or in part, with readability. (6; 10; 31) Four commonly used textbooks for college drafting courses were analyzed by Brownrigg (6). Three of the texts were found to be of upper twelfth-grade level; one was found to be of middle twelfth-grade level. The reading difficulty of the selections in the text was attributed to general vocabulary difficulty rather than to sentence length or technical vocabulary. Diener and Kaczkowski (10) concluded that occupational literature materials used by vocational counselors tended to be difficult. They found that skilled trade descriptions tended to be higher with respect to readability scores than the professional descriptions. The average difficulty or readability level of materials from *Occupational Outlook Handbook* was high college freshmen level. Ruth (31), applying the Flesch readability formula, found that mean grade level ratings of 85 *SRA Occupational Briefs* and of 35 items from other sources were approximately college sophomore level. He maintained that many of the occupational materials approximated professional journals with respect to readability levels. Braam (5) concluded that flexibility in reading rate was more a function of familiarity with the area or the material than of difficulty or readability.

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Appendix A

By-Laws

Of

National Reading Conference Inc.

ARTICLE I—MEMBERS

Section 1—**Annual Meeting**—The annual meeting of the members shall be held on the first Thursday in the month of December in each year, beginning with the year 1962 at the hour of 9:30 o'clock a.m., for the purpose of electing Directors and for the transaction of such other business as may come before the meeting. If the day fixed for the annual meeting shall be a legal holiday such meeting shall be held on the next succeeding business day. Such meeting shall be held at such place as may be designated from time to time by the Board of Directors.

Section 2—**Special Meetings**—Special meetings of the members, for any purpose or purposes, unless prescribed by statute, may be called by a majority vote of the entire Board of Directors.

Section 3—**Notice of Meeting** — Written notice stating the place, day and hour of the meeting, and in case of a special meeting, the purpose or purposes for which the meeting is called, shall be delivered not less than thirty (30) nor more than ninety (90) days before the date of the meeting, either personally or by mail, by or at the direction of the President or the Secretary. If mailed, such notice shall be deemed to be delivered when deposited in the United States Mail, addressed to the member at his address as it appears on the record books of the corporation, with postage thereon prepaid.

Section 4—**Quorum**—Forty (40) per cent of the members in good standing of the corporation, represented in person or by proxy, shall constitute a quorum at a meeting of the members.

Section 5—**Proxies**—At all meetings of the members, a member entitled to vote may vote by proxy appointed in writing by the member or his duly authorized attorney-in-fact. Such proxy shall be filed with the Secretary of the corporation before or at the time of the meeting.

Section 6—**Waiver of Notice by Members**—Whenever any notice whatever is required to be given to any member of the corporation under the provisions of these By-Laws or under the provisions of the Articles of Incorporation or under the provisions of any statutes, a waiver thereof in writing, signed at any time, whether before or after the time of meeting, by the member entitled to such notice, shall be deemed equivalent to the giving of such notice.

ARTICLE II—BOARD OF DIRECTORS

Section 1—**General Powers**—The Board of Directors shall exercise general supervision and control over the property and affairs of the corporation, shall decide all questions involving cooperation with other professional organizations, and shall supervise the execution of approved policies. The Board of Directors shall have authority over the property and affairs of the corporation and shall take such actions as are necessary and proper to facilitate the purposes of the corporation, within the powers delegated by these By-Laws.

Section 2—**Membership, Tenure and Qualifications** — The Board of Directors shall consist of the Past-President, the President, the Vice-President, the Secretary, and the Treasurer of the corporation, and three (3) additional members elected by the membership. The Editor and the Associate Editor of the Yearbook shall be ex officio members. The President shall serve as Chairman of the Board of Directors. Two of the members of the Board elected by the membership shall serve for a term of two (2) years, and one shall serve for a term of three (3) years. Each term of office shall begin on the first of January next following the election of such Director.

Section 3—**Regular Meetings**—A regular meeting of the Board of Directors shall be held without other notice than this By-Law immediately after, and at the same place as, the annual meeting of the members. The Board of Directors may provide, by resolution, the time and place for the holding of additional regular meetings without other notice than such resolution.

Section 4—**Special Meetings**—Special meetings of the Board of Directors may be called by or at the request of the President or of any five (5) members of the Board of Directors. The person or persons authorized to call special meetings of the Board of Directors may fix any place and time as the place for holding any such special meeting of the Board of Directors called by them.

Section 5—**Notice**—Notice of any special meeting shall be given at least thirty (30) days previously thereto by written notice delivered personally or mailed to each Director at his business address, or by telegram. If mailed, such notice shall be deemed to be delivered when deposited in the United States Mail so addressed, with postage thereon paid. If notice be given by telegram, such notice shall be deemed to be delivered when the telegram is delivered to the Telegraph Company. The attendance of a Director at a meeting shall constitute a waiver of notice of such meeting, except where a Director attends a meeting and objects thereat to the transaction of any business because the meeting is not lawfully called or convened. Whenever any notice whatever is required to be given to any Director of the corporation under the provisions of these By-Laws or under the provisions of the Articles of Incorporation or under the provisions of any statute, a waiver thereof in writing, signed at any time, whether before or after the time of meeting, by the Director entitled to such notice, shall be deemed equivalent to the giving of such notice.

Section 6—**Quorum**—The President or the Vice-President and three (3) voting members of the Board of Directors shall constitute a quorum for the transaction of business at any meeting.

Section 7—**Vacancies**—Any vacancy occurring on the Board of Directors may be filled until the next succeeding January 1 by the affirmative vote of the majority of the Directors then in office.

Section 8—**Budget**—The Board of Directors shall request the preparation of a budget by the Budget Committee annually and shall accept or modify it.

Section 9—**Nomination and Election of Board Members**—The Vice-President and the three (3) non-officer members of the Board of Directors shall be elected by ballot.

The Elections Committee shall prepare a slate of nominees as provided herein, which shall include a Vice-President and sufficient nominations to fill any vacancies on the Board of Directors. Where unexpected vacancies have occurred during the preceding year the Board of Directors may request the Elections Committee to add other Directors. Two or more candidates shall be nominated for each vacancy. Advance consent shall be secured by the Elections Committee from each nominee. A vita for each nominee shall be prepared.

A plurality of the votes cast shall constitute an election. In case of a tie, a ballot for the two highest nominees shall be taken at the annual meeting of the members.

ARTICLE III—OFFICERS

Section 1—**Number**—The principal officers of the corporation shall be a President, a Vice-President, a Past-President, a Secretary, and a Treasurer. The elected officers of the corporation shall be the President, the Vice-President, and the Past-President. The appointed officers of the corporation shall be the Secretary and the Treasurer who shall be appointed by the Board of Directors.

Section 2—**Election and Term of Office**—The elected officers of the corporation shall serve for a term of two (2) years and such term shall start on the first day of January next following the election.

Any member of the corporation in good standing is eligible to be elected as an officer of the corporation.

At the expiration of his term of office the President shall become automatically the Past-President for a period of two (2) years. At the expiration of his term the Vice-President shall automatically become the President of the corporation for a period of two (2) years.

The Secretary and the Treasurer of the corporation shall be appointed by the Board of Directors for a three (3) year term, and may be reappointed at the discretion of the Board. The Secretary and the Treasurer may be replaced for incapacity or incompetency by a majority vote of the entire Board.

Section 3—**President**—The President shall act as the executive officer of the corporation. He shall preside at all meetings of the members and as Chairman of the Board of Directors. He shall countersign all contracts and other instruments of the corporation except checks. He shall exercise general leadership and supervision over the affairs of the corporation in implementing its purposes. He shall execute such additional duties as are defined by the Board of Directors from time to time. He shall assume the duties of the Treasurer in the event of the death or incapacity of the Treasurer until such time as the office is filled in accordance with these By-Laws.

Section 4—**Vice-President**—The Vice-President shall serve as a member of the Board of Directors and as Chairman of the Program Committee, and shall fulfill such other duties as are assigned to him by the Board of Directors from time to time. He shall assume and perform the duties of the President in the event of the absence, incapacity, death or resignation of the President. In the event the office of the President becomes vacant, the Vice-President shall become President immediately and shall serve the unexpired portion of the President's term in addition to the normal two (2) year term which he would have served by virtue of his normal succession to the Presidency.

Section 5—**Secretary**—The Secretary shall: (1) Execute the duties essential to the maintenance of records and correspondence of the corporation; (2) Act as Secretary of the Board of Directors; (3) Accept members into the corporation and maintain the roster of members.

Section 6—**Treasurer**—The Treasurer shall: (1) Have custody of the funds of the corporation which shall be deposited in the name of the corporation at such bank as the Board of Directors may from time to time specify; (2) Collect dues and other monies due the corporation; (3) Sign checks and drafts on behalf of the corporation for the disbursement of funds, in accordance with the budget approved annually by the Board of Directors; (4) Provide a bond for an amount fixed by the Board of Directors, the bond to be filed with the President and the cost of which to be paid by the corporation; (5) Cooperate fully with a Certified Public Accountant at the time of the annual audit; and (6) Have such additional duties as may be assigned by the President, or the Board of Directors.

Section 7—**Communication Between Meetings**—The President and the other officers of the corporation are authorized to consult the Board of Directors by mail, telegram or telephone concerning important decisions which must be made between meetings.

ARTICLE IV—AMENDMENTS

These By-Laws may be altered, amended or repealed and new By-Laws may be adopted by the members at any regular or special meeting of the members as follows:

1. By proposal of five (5) members of the Board of Directors, or

2. Petition of forty (40) or more active members of the corporation.

Amendments shall be adopted by either of the two following methods to be determined at the discretion of the Board of Directors.

1. Amendments may be adopted by the affirmative vote of two-thirds (2/3) of the voting members present at a regular or special meeting of the corporation, provided that the proposed amendment has been mailed to each voting member at least thirty (30) days in advance of the meeting of the corporation.
2. Amendments may be adopted by mail ballot mailed to all active members of the corporation. If a mail ballot is used, only the ballots returned to the Secretary within thirty (30) days after the date the ballots were mailed to the members shall be counted. An amendment shall be declared adopted if it is approved by two-thirds (2/3) of those members voting who have returned their ballots within the prescribed time, provided that ballots are returned by at least forty (40) per cent of the total voting membership of the corporation.

ARTICLE V—COMMITTEES

Section 1—**The Publications Committee**—The Publications Committee shall be responsible for all official publications of the corporation. It shall make overall plans for the Yearbook; it shall explore the needs for other bulletins or publications in reading, which may be sponsored by the corporation. The Board of Directors shall delegate to the Editor of the Yearbook and to the Associate Editor the responsibility for carrying out the plans developed, when they are approved by the Board of Directors. The responsibility for publications other than the Yearbook may be delegated to other Editors, with the approval of the Board of Directors. The Editor and the Associate Editor of the Yearbook shall be ex officio members of the Board of Directors, appointed by the Board of Directors for a term of two (2) years.

Section 2—**The Program Committee**—The Program Committee shall make plans for the annual meeting of the corporation and such other meetings as may be authorized by the Board of Directors. The Vice-President shall be Chairman of this Committee.

Section 3—**The Elections Committee**—The Elections Committee shall function as defined in the provisions of these By-Laws relating to the preparation of a slate of nominees for Vice-President and Directors of the corporation.

Section 4—**The Budget Committee**—The Budget Committee shall examine the income and expenditures of the corporation and shall be responsible for preparing the annual budget prior to the annual meeting of the corporation. Members of the Budget Committee shall be the President, Past-President, Vice-President, and Treasurer.

Section 5—**Standing Committees**—The number of standing committees may be increased or decreased upon the recommendation of the Board of Directors. The number of members of each standing committee shall be determined by the Board of Directors, provided that the number of members of each committee shall not be less than three (3). The members of the standing committees shall be appointed by the President with the approval of the Board of Directors. Committees shall serve for the term of the President unless otherwise specified. In making appointments, consideration shall be given to the desirability of an experienced gradually changing personnel. The Chairman of each standing committee shall be appointed yearly by the President with the approval of the Board of Directors, except with respect to the Chairman of the Program Committee.

Section 6—**Temporary or Special Committees**—Temporary or special committees may be authorized from time to time by the Board of Directors and shall serve for the period specified by the Board. The number of members of each temporary committee shall be determined by the Board of Directors, provided that the number serving shall not be less than three (3). The members of the temporary committees and the Chairman shall be appointed by the President with the approval of the Board of Directors.

ARTICLE VI—MEMBERSHIP

Section 1—**Eligibility**—Membership in the corporation shall be open to all persons engaged in the teaching or supervision of reading at high school, college, and adult levels and to all others interested in the purposes of the corporation.

Section 2—**Active Members**—Active membership in the corporation shall become effective upon filing an application with the Treasurer and payment of initial dues.

Section 3—**Dues**—Dues are payable on or before the second day of the annual meeting for each fiscal year. Notices of dues shall be mailed by the Treasurer on or before November 1 of each year, and the members may pay their dues anytime after receipt of the notice, but in any case not later than the second day of the annual meeting. Dues for membership shall be set by the Board of Directors. Any member who is not in default with respect to his dues may vote as a member of the corporation.

Section 4—**Standing of Members**—Any member whose dues remain unpaid after February 1 of any year shall be removed from the roll of active membership, with consequent loss of all privileges. Such member may be re-instated upon full payment of dues for the year in which application for re-instatement shall be made. Membership may also be suspended or revoked by action of the Board of Directors and upon approval of at least five (5) members thereof. Such action shall be taken only for cause and subject to the right of the member concerned to be heard.

Section 5—**Good Name**—The name of the corporation shall not be used by individual members for the purposes of advertising or personal benefit. Violations shall be reported to the Vice-President with authorization to study them and recommend action to the Board. Action to expel a member on these grounds must be approved by a seventy-five (75) per cent vote of the Board of Directors.

ARTICLE VII—NATURE AND PURPOSES

This corporation shall be a non-profit professional organization for individuals who are genuinely concerned with the improvement of reading programs and teaching procedures, both developmental and remedial for adults and college students, and with providing adequate guidance in all situations in which reading serves as a vital aid to learning.

The purpose of the corporation shall be: (1) To encourage the study of reading problems at all educational levels, with particular emphasis on college and adult reading; (2) To stimulate and promote research in developmental, corrective and remedial reading; (3) To study the various factors that influence progress in reading; (4) To publish the results of pertinent and significant investigations and practices; (5) To assist in the development of more adequate teacher-training programs; (6) To act as a clearing house for information relating to reading; (7) To disseminate knowledge helpful in the solution of problems related to reading; and (8) To sponsor conferences and meetings planned to implement the purposes of the corporation.

FOURTEENTH ANNUAL MEETING
NATIONAL READING CONFERENCE

The Fourteenth Annual Meeting will be held in Dallas, Texas, from December 3 through December 5, 1964.

THEME:

Philosophical and Sociological Bases of College-Adult Reading

The conference is sponsored by Southern Methodist University. Further information may be obtained from:

Dorothy K. Bracken
Director, The Reading Clinic
Southern Methodist University
Dallas, Texas

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